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CLINICAL CHARACTERISTICS OF SEX OFFENDERS.

By

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Thesis Abstract

Background: Sexual violence against children across different mediums, both online and offline is a prevailing problem. Yet there is a dearth of research on clinical characteristics of these contact child sex offenders, and in particular Internet child sex offender groups. Primarily previous research has focused on risk and risk management. In contrast, recently defining clinical characteristics has become a research focus, with clinical needs and deficits such as social anxiety and loneliness being investigated as potential psychological factors that precipitate and maintain offending. Despite this, these clinical characteristics have not been assessed in this offender group in Scotland. It is on this basis that this thesis endeavours to explore these features within the child sex offender population.

Method: A systematic review of the literature was performed to identify if social anxiety is associated with male contact child sex offenders. Secondly, the empirical research study employed an exploratory quantitative design and to inform our understanding of the psychological characteristics of community Internet child sex offenders (N=31) when compared with non-offenders (N = 31). It was hypothesised that social anxiety, loneliness and obsessive compulsive disorder would be greater in the offender sample. Mann Whitney U tests and Kendal-tau correlations were used to investigate the hypotheses between the groups. Initially, contact child sex offenders and violent offenders were recruited for comparison, however due to insufficient numbers were excluded from the final study.

Results: The systematic review suggested eight of the eighteen studies showed an inconclusive statistical association between social anxiety and sexual offending against

children. Of the remaining ten studies, one study had a strong statistical association, four studies had a moderate statistical association and five studies were weak statistical association. The empirical research study found that social anxiety and loneliness were statistically significantly greater in Internet child sex offenders than non-offenders. Additionally, correlations between online cognitions dependency (problematic internet use) and social anxiety and loneliness were significant, indicating a possible function of problematic Internet use within this offender group.

Conclusions: Overall, the findings from the systematic review indicate there is lack of strong statistical association studies between social anxiety and sex offending, therefore, the results may have been tempered by other factors due to methodological inconsistencies across the studies. The empirical study indicated a statistically significant difference between the groups on social anxiety and loneliness, with Internet child pornography sex offenders were statistical significantly greater in these deficits than non-offenders. However, clinically only one fifth of the ICSO group reached the clinically significant cut off for social anxiety. Additionally, there may not be a direct relationship due to several possible confounding factors. The role of problematic Internet use may increase clarity on the clinical characteristics of this offender group and warrants further investigation. The implications of this research suggest that treatment may require a focus on social needs and isolation within this group. Strengths and limitations of the systematic review and the research were discussed with implications for clinical practice and future research also being proposed.

Word count: 18,573 (excluding tables and figures)

21,719 (with tables and figures)

Declaration

I, Shauneen Porter, declare that this thesis was written by me and that I conducted the work detailed herein. This work has not been submitted for, or accepted in, any previous degree or professional qualification.

Shauneen Porter

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Chapter I

Systematic Review

Sex offending and social anxiety: A systematic review.*

*This paper has been prepared according to the requirements of the Journal of Aggression and Violent Behavior.

Word count: 8,141 (excluding tables and figures)

Title: Sex offending and social anxiety: A systematic review.

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Title: Child sex offending and social anxiety: A systematic review.

Abstract

For innovative up-to-date research in an area to be developed, it is important to systematically, and critically evaluate the previous research. Sexual violence against children is one of the most serious crimes, with detrimental psychological and physical consequences on the victims. Contemporary theories of the development and maintenance of sexual offending against children incorporate intimacy deficits and social skills deficits. However, there is a dearth of research addressing the clinical needs of males who commit sexual offences against children. This systematic review critically evaluates previous research on the association between social anxiety and sexual offending against children. Relevant databases were searched and selected journals hand searched to identify papers. Studies were evaluated for eligibility, data extracted and study quality assessed, with a second rater to establish inter-rater reliability. The results indicate the eight of the eighteen studies reviewed reported an inconclusive statistical association with child sex offenders and social anxiety. Of the remaining ten studies, one study had a strong statistical association, four studies had a moderate statistical association and five studies were weak statistical association. Overall, the findings indicate methodological inconsistencies and lack of definitional clarity of subgroups of sex offenders, therefore comparison between studies is challenging. Further research in this area with definitional clarity of subgroups is required to inform evidence-based practice for this offender group.

Keywords: Sexual offenders, child sexual abuse, paraphilia, social anxiety.

Introduction

Sexual violence and abuse is defined as forcing, or attempting to force any behaviour of a sexual nature, which is unwanted by the other person, including cases where he/she does not consent or understand (Scottish Crime and Justice Survey, 2011). Within society, these are considered to be some of the most serious and damaging offences, particularly when committed against children, which can have significant consequences for the physical, emotional and psychological well-being of the victims (Pérez-Fuentes, Olfson, Villegas, Morcillo, Wang & Blanco, 2013). Estimations of prevalence are predominantly based on official criminal statistics for all sexual offences and are unlikely to accurately reflect the prevalence of sexual offences against children, as these offences are vastly undetected and unreported (Lussier & Cale, 2013). Victimisation surveys in the UK indicate an overall decline of 12.5% in sexual offences since 2004, with a slight increase of 1% between 2009/10 to 2011/12 (British Crime Survey, 2011/12), which may be due to recent media attention and campaigns to raise awareness of child sexual abuse (CSA). However, victim surveys are also likely to be an underestimation of the prevalence of sex offences (Lussier & Cale, 2013).

There are concerns over the prevalence of CSA and our ability to predict which people are likely to offend. Understanding why individuals sexually offend has been a driving force for research in the sex offender literature in order to reduce risk and improve clinical interventions. However, sex offender literature almost exclusively focuses on sexual recidivism (i.e. those factors that contribute to repeat offending post-conviction) (Lussier & Davis, 2011), rather than those factors that might be associated with such offending (directly or indirectly). Due to concerns over dangerousness, researchers are driven by public and political demand to understand contact child sex

offenders (CCSO) and the factors that are associated with risk and risk management. Thornton (2002) identifies four areas of dynamic risk factors: socio-affective functioning, sexual interests, distorted attitudes, and self-management, this review focuses on socio-affective functioning.

Theories of sexual offending

Numerous theories have been proposed to identify underlying factors leading to offending by CCSOs (e.g. Finkelhor, 1984; Hall & Hirshman, 1991; Marshall & Barbaree, 1990; Ward & Hudson, 1998; Ward & Siegert, 2002). Theories of sexual offending are multifactorial, involving biological, cultural and developmental factors (Ward, Polaschek & Beech, 2006). These important theoretical developments include both specific single factor theories, as well more complex integrated models with multiple factors (Thakker & Ward, 2012). Social, interpersonal and intimacy deficits have been highlighted in theories of sexual offending as a cluster of common characteristics among some sex offenders, which results in difficulties establishing or maintaining relationships (Ward, Polaschek & Beech, 2006).

Psychiatric disorders

Axis I Disorders in this population have received limited research attention. It is speculated that an increased understanding of these factors within the child sex offender population could serve several functions: assist risk assessment, influence appropriate treatment and increase understanding of individuals' behaviours and motivations. Anxiety disorders are a group of psychiatric diagnoses that may prove relevant. Social Anxiety (SA) can lead to social isolation and lack of intimate relations with adults.

A previous review considers comorbidity of psychiatric Axis I disorders in sex offenders with a pharmacological treatment focus, report that pharmacological treatments for ameliorating comorbid Axis I may reduce sexual impulsivity (Kafka, 2012). The studies reviewed by Kafka (2012) were diverse in sample types, diagnostic methodologies and settings, with no indication of the quality of the primary research. Not all studies examined the same broad range of Axis I disorders or focused on one specific disorder (e.g. exclusively SA). Hence, although SA is commented on for some of the studies, there is a need for systematic exploration. There is also a need to know more about psychological treatments, considering that psychological interventions for SA are recommended in National Institute of Health and Care Excellence guidelines (NICE; 2013) for non-offenders.

Social Anxiety

Social anxiety disorder (SAD) is defined by "a marked and persistent fear of social or performance situations in which embarrassment may occur" (pp.450) (American Psychiatric Association; APA, 2000). A National Comorbidity Survey-Replication study estimated in the general population the twelve month and lifetime prevalence of social anxiety to be 7.1% and 12.1%. (Kessler et al., 2005). Heimberg, Brozovich and Rapee (2010) described how the individual's perception of potential negative evaluation or rejection by others results in an intense fear and avoidance of social situations. Clark and Wells' model (1995) described a shift to an internal focus of attention: internal information is used to infer how one appears to others and safety behaviours maintain SA. Common features of SAD include fear of social interaction, fear of attracting attention, hypersensitivity to criticism, fear of negative evaluation or/and rejection from others, low self-esteem and lack of assertiveness (APA, 2000).

Comorbidity social anxiety and sex offending

Harsch (2005) suggests it is not only sex offenders in psychiatric settings who exhibit mental disorders, but also violent offenders and sex offenders in other settings such as prison. Yet, studies are largely correlational, and therefore not indicative of a causal relationship between mental disorder and sexual offending. Nunes, McPhail and Babchishin (2012) meta-analysis found evidence for social anxiety among sex offenders. It is possible that the process of being convicted of a sex offence may promote the development of a psychiatric disorder through the impact of society's disdain and judgement, isolation from family and friends, being the lowest in the hierarchy of prison populations and often having been the victim of abuse (Marshall, Marshall, Serran & O'Brien, 2009). Conviction may be a traumatic experience resulting in guilt, shame and social rejection (Hunter & Figueredo, 2000).

A recent cumulative meta-analysis (Nune et al., 2012) focused on the relationship between SA and sex offenders. The results indicated CCSOs have greater socially anxiety than sex offenders against adults (SOA) and non-offenders, however results indicated only slightly more socially anxious than non-sex offenders. Nunes et al.'s (2012) meta-analysis included six studies in total, and the studies, published and unpublished, occurred between 1983 and 1997. The main inclusion criterion was that studies utilised the Social Avoidance and Distress Scale (SADS; Watson & Friend, 1969). The limitations of this analysis include the exclusion of other measures or tools to assess SA, with no consideration of the methodological weaknesses or strengths of the individual studies included in the analysis. Furthermore, the heterogeneity of sex offenders was not considered due to the small sample size, as this would require an examination of the differences between subgroups of sex offenders according to victim

characteristics (e.g. victim gender, relationship with victim), sexual disorder diagnosis or offender typology.

Aims of review

A systematic review uses rigorous methods for critically appraising the literature with a clear and systematic approach to identify studies, and addresses key aspects of study design that may introduce internal or external bias (NICE; 2009). This review aims to appraise the available literature regarding the association between SA and sex offending. Sex offenders are a heterogeneous group (Hickey, 2006) and this review will therefore focus on contact sexual offenders against children.

The present review aimed to include studies measuring SA through multiple psychometric instruments, behavioural measures and structured clinical interviews. This widens the scope of the review beyond the meta-analysis completed by Nunes et al. (2012), to answer the following question: *'Is there evidence for social anxiety in contact child sex offenders?'* This review intends to complement existing reviews and meta-analyses, and to add clarity regarding quality of the primary research, in order to inform future research and practice.

There is an increasing recognition that assessment and treatment of mental disorders within offenders is relevant, as treating 'needs' beyond those that are purely 'criminological', increases the probability of successful rehabilitation (Harsch, 2005), and therefore understanding the role of social anxiety is imperative.

Method

This systematic review followed guidelines set out and recommended by the Centre for Reviews and Dissemination (CRD) of the University of York (CRD, 2009), Meta-analyses of Observational Studies in Epidemiology (MOOSE; Stroup et al., 2000) and Methodology Checklist for Systematic Reviews and Meta-analyses (Scottish Intercollegiate Guidelines Network 50; SIGN 50; Annex C, 2013).

Inclusion and exclusion criteria

Study Design

Eligible studies were quantitative, descriptive or observational. Studies were eligible for inclusion if the primary or secondary aim examined (a) the prevalence of SA among child sex offender subjects and/or (b) the association between SA and child sex offenders. Studies had to be peer reviewed, original publications and published in English (due to translation limitations). Reviews of the literature, commentaries, editorials and other examples of non-primary research were excluded.

Population

Studies based on adult (18+ years old) males who were convicted on contact sexual offences against children were included. Sex offenders with an additional diagnosed sexual disorder are included in the review. Including Paraphilia DSM IV criteria (302.2) which include individuals with a recurrent intense sexual arousal to atypical objects, situations, or individuals for greater than six months duration and interfere with the capacity for reciprocal sexual activity and cause significant distress to individual or harm to others (APA, 2000). Paraphilic specific disorders include pedophilia, fetishism, sexual masochism, transvestic fetishism, frotteurism, sexual sadism, voyeurism and

exhibitionism. Paraphilia-related disorders (PRD) DSM IV criteria include nonparaphilic sexual excessive behaviours are characterized by sexual preoccupation and volitional impairment may include compulsive masturbation, ego-dystonic promiscuity, dependent on anonymous sexual outlet pornography or telephone sex (Kafka, 2000). Impulse control disorders (ICD) DSM IV criteria (312.30) if one-hands on offence with reported loss of impulse control prior to and during the offence with no sexual deviant fantasies (APA, 2000). Due to the heterogeneous nature of sex offenders (Seto & Lalumiere, 2010) studies based on female sex offenders, adolescent sex offenders, and sex offenders with known intellectual disabilities were excluded. Some studies did not necessarily look at SA per se but Axis I disorders or components of SA such as 'fear of negative evaluation' or 'social skills' and their relationship to sex offending were included.

Literature search criteria

Search Strategy

The primary author of this review (SP) conducted a search of the following electronic databases for relevant literature up to April 1, 2013: ASSIA (Applied Social Sciences Index and Abstracts), BIOSIS Previews, EMBASE, Medline, PsycINFO, ProQuest, and Web of Knowledge. The publications were limited to peer reviewed published journals from 1980-2013. Additionally, key journals highlighted in the early scoping searches were hand searched, because electronic searches depend on databases correctly indexing studies, and errors in indexing can occur frequently (Petticrew & Roberts, 2006). The Journal of Clinical Psychiatry, Journal of Sexual Aggression and Sexual Abuse: A Journal of Research and Treatment were hand searched between 2003 and 2013. Detailed search strategies used the keywords presented in Table 1.1. Key words from

other sex offender studies were also searched in conjunction with social anxiety/phobia. Additionally, it was decided to expand the terminology for social anxiety to include 'social distress', 'social avoidance' and 'social competencies' similar to Nunes et al. (2012). Strategies were revised appropriately for each database to take account of differences in controlled vocabulary and syntax rules.

Table 1.1: Search term strings used in the systematic search

	Search term string
Term 1	'sex* offend*'; or 'rape'; or 'rapist*'; or 'child molest*'; or 'p?edophil*'; or 'sex* assault'; or 'incest'; or 'indecent exposure'; or 'sexual* devian*'; or 'paraphilia*'; or 'child pornography'; or 'crimin*'; or 'voyeurism'; or 'exhibitionist'
	AND
Term 2	'social anxiety'; or 'social phobia'; or 'social avoidance'; or 'social distress'; or 'social competencies'

(NB American/ British Spelling, *: truncation for multiple endings).

Study selection

After duplicates were removed, the various search strategies resulted in a total of 915 studies. The titles were screened with respect to inclusion and exclusion criteria, resulting in 145 studies. Those studies discharged at this stage were either clearly unrelated to the aims of the systematic review, or examined excluded populations. The abstracts of the remaining studies were examined according to the criteria, resulting in 28 potential studies to be included in the review. The included studies were obtained as complete articles, read in full and considered for inclusion. At this stage, 10 studies were excluded . Eighteen studies were included in the review, upon examination these were mainly three types: (1) descriptive clinical interview, (2) psychometric measures of anxiety or (3) experimental studies, which are considered separately within the review. See Figure 1 for flow diagram of the literature search and study selection.

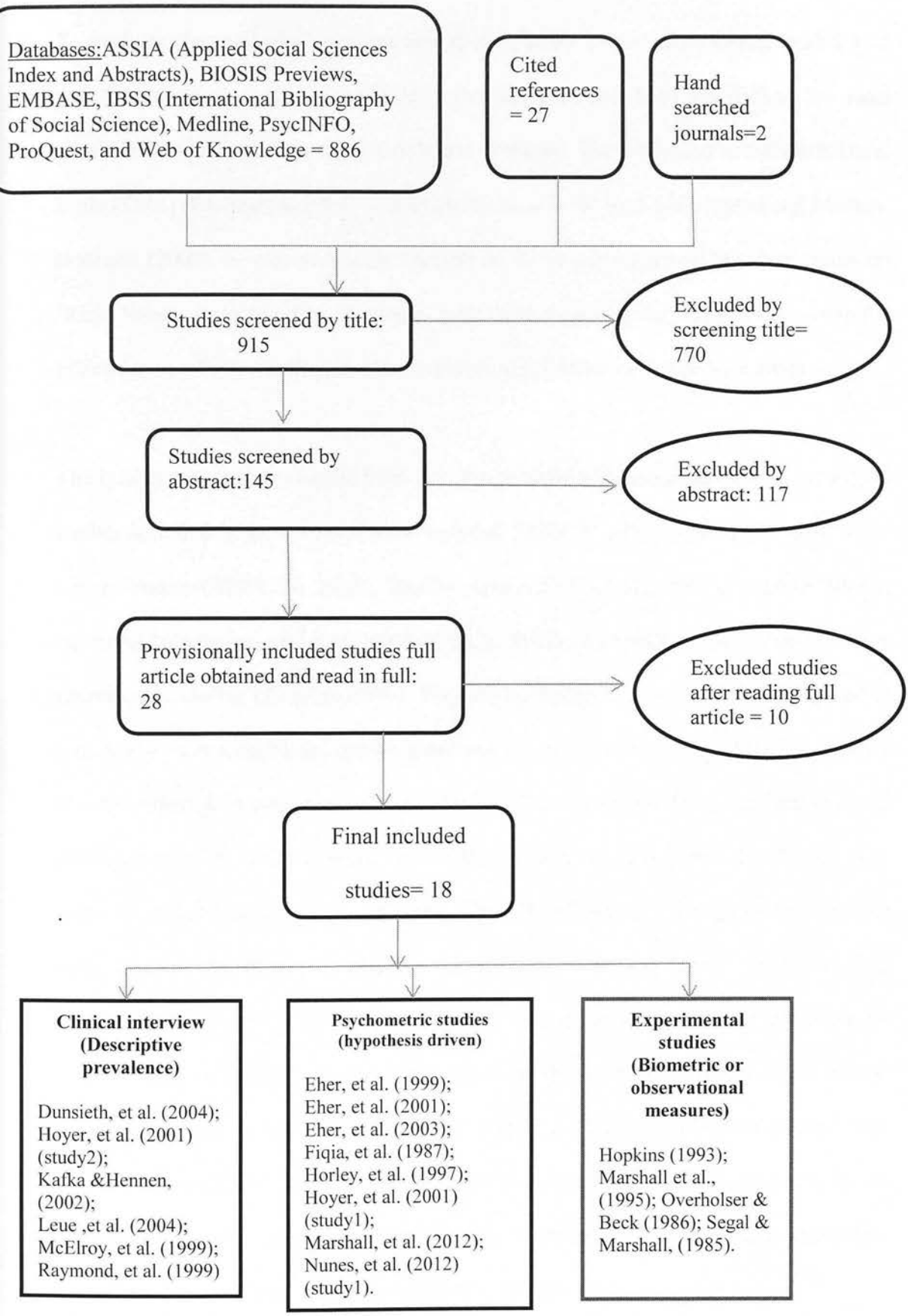

Figure 1.1: Diagram of literature search process.

Assessment of methodological quality

To evaluate the methodological quality of each study a specially adapted quality tool was developed. A systematic search of the literature had been undertaken for valid quality assessment tools in the sex offender literature. The Maryland Scientific Method Scale (SMS) (Farrington, 2003) is extensively used in the area and Hanson and Morton-Bourgon (2009) developed a scale specific to the requirements of this area based on 'Risk, Needs, Responsivity'. However, both these measures are designed to assess the effectiveness of intervention studies, and were not suitable for the present study.

The quality tool was developed from existing guidelines to accommodate observational studies included in the review. These included SIGN 50 critical appraisal checklist for cohort studies (SIGN 50, 2013), Quality Appraisal Checklist for quantitative studies reporting correlations and associations (NICE, 2009) and Quality Assessment Tool for Quantitative studies (Thomas, 2003). The tool by Thomas (2003) was recommended in a review of non-randomised quality assessment tools (Deeks et al., 2003). The quality criteria aimed to assess the risk of selection bias, detection bias, confounders and statistical bias, by the amalgamation of different criteria related to each category. The majority of the criteria were scored 'Yes', 'No', 'Can't say' or 'Not applicable', though some criteria had different responses e.g. selection bias was scored 'highly likely', 'somewhat likely' 'Not likely' and 'can't say'. In total there were fifteen questions, an overall rating of quality was provided based on the number of criteria met, overall studies were rated 'Weak' (0-5), 'Moderate' (6-10) and 'Strong' (11-15). A second-rater verified inter-rater reliability, randomly rated a third of the studies independently, an adequate inter-rater consistency with Kappa co-efficient .78 was found (Randolph, 2008) and disagreements were reconciled through discussion.

Results

Further details of all studies and their main findings are presented in Table 1.2. Quality ratings of studies are presented in Table 1.3 and overall summary of quality are presented in Table 1.4.

Table 1.2 Summary of main findings for all studies

Author, date /country	Setting / Population	Sample (N)	Type study	Outcomes/ Measures used	Main findings
Dunsieth et al. (2004) USA	Setting: Residential treatment facility. Comparators: Sex offenders with PA & without PA.	N=133 PA =64 Without PA=26	Descriptive	SCID II** SCID-I/P	Anxiety disorders were more prevalent among paraphilic sex offenders. Social Anxiety diagnosis: PA group: Lifetime 13.1%. Non-PA group: Lifetime 0%.
Hoyer et al. (2001) Germany Study 2	Setting: State forensic hospital. Comparators: MDO Sex offenders with PA or ICD.	N=55 PA = 30 ICD= 25	Descriptive	Mini- DIPS** SIAS* SPS*	Study 2 found a high lifetime and point prevalence of social anxiety in PA individuals, corroborating evidence found in questionnaire results. Social anxiety diagnosis: PA group=Current 23.3%; Lifetime 53.3% ICD group= current: 8%; Lifetime: 20%
Kafka and Hennen (2002) USA	Setting: outpatient Comparators: Individuals with PA and non-offenders with PRD.	N=120 PA=88 (includingSex offenders=60) PRD =32	Descriptive	Symptoms checklist-DSM-IV Axis I diagnoses** Psychiatric interview***	Social Anxiety diagnosis: PA group: Lifetime SA: 20.4%/ PRD group: Lifetime SA: 25%;
Leue et al. (2004) Germany	Setting: State forensic Hospital. Comparators: Sex offenders with PA or ICD.	N=55 PA = 30 ICD =25	Descriptive	MINI-DIPS** Clinical structured interviews (DSM-IV).	SA most common among PA sexual offenders. Social Anxiety diagnosis: PA group: current 23%; Lifetime 53% ICD group: current 8%; Lifetime 20%
McElroy et al. (1999) USA	Setting: Residential treatment facility. Comparators: Sex Offenders (SOA and CCSO).	N=36	Descriptive	SCID- IV** SCID-I/P	High rates of lifetime DSM-IV Axis I disorders, 58% were diagnosed with a PA. Social anxiety diagnosis: PA: Lifetime SA =19% Without paraphilia: Lifetime SA=13%
Raymond et al. (1999)	Setting: Residential / outpatient treatment Comparators: Sex offenders with paedophilia.	N=45	Descriptive	Structured Clinical Interview** SCID – P ** Semi-structured sexual disorder. ***	93% met the criteria for an Axis I disorder other than paraphilia. Social anxiety diagnosis: Paedophilia: current SA=31.3% Lifetime SA = 37.8% (age of onset of social anxiety 9.9(3.7 SD) years).
Eher et al. (1999) Austria	Setting: Prison Comparators: SOA, CCSO, Community male controls.	N= 57 SOA =29, CCSO =28, Community group =23	Psychometric	IIP* IAF* Structured Clinical Interview***	Groups differed significantly across the fear of negative evaluation but did not differ across socially avoidant. SOA and CCSO differ significantly on fears of being evaluated negatively by others. SOA scored the lowest on fear of negative evaluation.
Eher et al. (2001) Austria Peer reviewed	Setting: medium secure facility Comparators CCSO extrafamilial (1) male victim (2) female or both sexes victim.	N = 48 CCSO Male victim =18 Female/or both = 30	Psychometric	STAI*, SIAS*, SPS*. SKID** MTC:CM3 typology	No significant differences were found on anxiety, or social anxiety scales, only reported means. Exclusively male target offenders were found to be less socially competent on MTC:CM3 typology.
Eher et al. (2003) Austria	Setting: Medium security institution Comparators: (1)SOA: Nonparaphilic & nonsexualise (MTC:R3) (2)SOA: PA & sexualised (MTC:R3) (3) CCSO (MTC:CM3).	N=97 Group 1: n= 22 Group 2: n= 30 Group 3: n=45	Psychometric	STAI*, SIAS*, SPS* SKID I and SKID II** MTC: CM3 and MTC:R3	CCSO (group 3) significantly higher than SOA (group 1 and group2) on social interaction anxiety scale. No significant difference on social phobia scale. Social anxiety diagnosis was not reported.

Author, date /country	Setting / Population	Sample (N)	Study type	Outcomes/ Measures used	Main findings
Fiqia et al. (1987) UK	Setting: Prison Comparators (1)Sex offenders (2) NSO	N= 69 Sex offenders =32 NSO =37	Psychometric	SCS*, FNE*, SSS*	Sex offenders reported more social anxiety, fear of negative appraisal, and indirect hostility than NSO. A multiple regression analysis showed hostility, fear of negative evaluation, and social skill deficits were the best predictors of total violent crimes, whereas total sex crimes not predicted by any factor.
Horley et al. (1997) Canada	Setting: Maximum secure institution. Comparators: CCSO & NSO.	N=138 CCSO =68 NSO =70	Psychometric	Semantic differential: Rep-grid SADS*	Social anxiety was not the focus of the study but was measured as a covariate. However, there was no significant difference between groups on social anxiety.
Hoyer et al. (2001) Germany Study 1	Setting: Forensic hospital Comparators: Sex offenders with PA, Sex offenders with ICD, NSO.	N =102 PA = 42 ICD = 30 NSO = 30	Psychometric	SIAS*, SPS* DSM-IV criteria for PA & ICD.	Study 1: Significantly higher scores for social anxiety in paraphiliacs, only for social interaction anxiety scale. High prevalence of paraphilics (51%) reached cut off for social anxiety.
Marshall, et al. (2012) Canada	Setting: Prison Comparators: ICSO CCSO	N=60 ICSO =30 CCSO =30	Psychometric	SPIN*.	ICSOs are significantly more lonely and obsessive-compulsive than CCSOs. Groups did not differ on SA, the ICSOs mean score in the range that meets diagnostic criteria for SA.
Nunes et al. (2012) Canada Study 1	Setting: Prison Comparators: CCSO & NSO	N=61 CCSO =30 NSO = 31	Psychometric	SADS*	Study1: CCSO did not differ significantly from NSO on the SA.
Hopkins et al. (1993) Uk	Setting: Prison (Treatment group) Comparators: Mixed group CCSO/Rapists waitlist control group.	N=8: SOA & CCSO = 4 waitlist control =4	Experimental	SADS* FNE* Landing score behaviour**** Video ratings ****	Pre- and post- psychometric measures of treatment group reported means (SADS, FNE), showed a decrease in social anxiety following the group.
Marshall et al. (1995) Canada	Setting: Outpatients Comparators: SOA, CCSO SES matched NSO & university students.	N=95: SOA = 19 CCSO =36 SES similar NSO = 20, university students =20.	Experimental	SSEI*, SADS*, SRI*. Rate appropriate behaviour of actors.	CCSO were the most lacking in social self-confidence, socially anxious, and unassertive, but did not differ in response from the SES matched nonoffenders. Suggesting social deficits are derived from background.
Overholser and Beck (1986) USA	Setting: Medium secure prison. Comparators CCSO, SOA, NSO, Community NO low SES & students.	N=60: (12 participants per group)	Experimental	MAACL*, SADS*, FNE* Observations of role plays, GSR****, Timed Behaviour Checklist for anxiety****.	Hetersocial skills deficits were observed in CCSO and SOA in comparison to other groups. SADS was not significant across groups, but on FNE there was a sign effect. Newman-Keuls test identified CCSO displayed significantly more fear of negative evaluations.
Segal and Marshall, (1985) Canada	Setting: Maximum secure Prison Comparators: CCSO, SOA, NSO, NO low SS and NO high SS.	N=100 (20 participants per group)	Experimental	SADS*, SISST*, SHI*, Behavioural assessment****	Significant group differences on social anxiety. Post hoc analyses showed sex offenders did not differ from NSO. Though CCSO were significantly higher than SOA. CCSO rated themselves as less skilled and more anxious.

Abbreviations: Disorders: PA: Paraphilia; PRD: Paraphilia related disorder, NP: Non-paraphilia, ICD: Impulse control disorder.
Offender type: CCSO: Contact Child Sex Offender; ICSO: Internet Child Sex Offender; NSO: Non-sex offender; NO: Non-offender, SES: Socioeconomic

Measures of Social Anxiety

Psychometrics:

*SIAS Social Interaction Anxiety (Stangier et al., 1997) measure social anxiety in interactions with other people

*SPS: Social Phobia (Strangier et al., 1997) measure social anxiety in situations where one can be observed but not necessarily interacting with other people.

Structure tool for clinical interview:

**SCID-I/P (Spitzer et al., 1996) and SCID II (Spitzer et al., 1990): Structured Clinical Interview for DSM- IV

** SCID – P to diagnose both axis I and axis II disorders

** SKID-I/P (Wittchen et al., 1997) and SKID II (Fydrinch et al., 1997): Structured Clinical Interview for DSM- IV (German version)

**Mini-DIPS (Margraf et al., 1996) is a structured interview to diagnose axis I disorders according to the DSM-IV, for lifetime and point prevalence.

No tool utilised:

*** Clinical interview by Psychiatrist

***Semi-structured interview (Raymond & Coleman, 1999). Developed a semi structured interview to evaluate the presence or absence of all the disorders in the sexual disorders chapter, following the SCID-P format, as no standardised structured interview was available to diagnosis for sexual disorders.

Psychometrics:

*SADS: Social Avoidance and Distress Scale (Watson & Friend, 1969) to assess anxiety in, and avoidance of social situations.

*SSEI: Social Self-Esteem Inventory (Lawson et al., 1979) to assess self-confidence and social interactions

*SRI: Social Response Inventory (Keltner et al., 1981) measures both underassertion and overassertion (progressiveness) in response to various social demands or to distress caused by the actions of another person.

* MAACL: Multiple Affect Adjective Checklist (Zucjermann & Lubin, 1965) list of adjectives to describe how an individual typically feels.

*FNE: Fear of Negative Evaluation (Watson & Friend, 1969) measures anticipation and apprehension concerning the evaluation in a negative way by others and avoidance of negative situations.

*SISST: Social Interaction Self-Statement Test (Glass et al., 1982)

*SHI: Survey of Heterosexual interactions (Twentyman et al., 1981)

Behavioural experiments:

****Landing staff rating of social behaviour: Landing staff reported the social behaviour of both treatment and control groups on the wing over 8 weeks (It was was hoped they were blind to which individuals were participating in treatment and which were waitlist control.

****Video-taped interviews rated blindly by independent observers: Video tapes of interviews pre and post treatment being interviewed by an unknown female (both participant and interviewer were instructed not to mention the group. Six independent rates menaced: non-verbal skills, conversational ability and speech on a scale from 1-5, 1(indicating a deficit), 3 (appropriate use of skill under consideration) and 5 (an excess).

****TBCL – Anxiety modified (Kern, 1982)-observer measures the occurrences and non-occurrences of five main categories of behaviour(hand and arm movement, hand and arm restraint, foot and leg movement, body movement and lip movement).

****In vivo In Vivo: Behavioural assessment: Engage in conversation role play with female confederate for as long as he felt comfortable. If level of discomfort was great enough to want to escape, then would signal to experiment to end experiment. If continued to talk at ease, conversation would last 7minutes. Length of conversation was a measure of avoidance behaviour (Twentyman et al., 1981)

****GSR: Galvanic Skin Response. An Enting Conductron 330 portable GSR machine was used to provide a physiological measure of anxiety (5min adaption period and 5min baseline).

Summary of descriptive studies

In total there were six descriptive studies with a primary focus on comorbidity of Axis 1 disorders among sex offenders, rather than SA specifically. The countries of origin for these studies were the USA (4) and Germany (2). The studies were published between 1999 and 2004. The mean sample size was 64 sex offenders (ranging from 36-133 participants). One research group carried out two of the studies with data overlap (Dunsieth, et al., 2004; McElroy et al., 1999). The settings for the studies were Forensic State Hospital (2), residential treatment (2), outpatients (1) or a combination of outpatients and residential treatment (1).

One challenge faced by researchers studying sex offenders is the heterogeneity of the population and comparison with an appropriate group. The present studies fell into the following categories. Firstly, studies which defined samples by diagnostic criteria of DSM-IV sexual disorders. These included paraphilia versus impulse control disorders (Hoyer, Kunst, & Schmidt, 2001; Leue, Borchard, & Hoyer, 2004) or CCSO with paraphilia compared to CCSO without paraphilia (Dunsieth, et al., 2004). Kafka and Hennen (2002) compared a 'mixed' group of sex offenders (N=60) and non-sex offenders with paraphilia (N=28) versus non-sex offenders with paraphilia related disorders (N= 32). Secondly, one study compared according to offence type; rapists versus CCSO (McElroy et al., 1999). Thirdly, one study had no comparison group, and solely investigated males with paedophilia, one subtype of paraphilia (Raymond, Coleman, Ohlerking, Christenson, & Milner, 1999).

All the studies utilised methods based on DSM-IV criteria to diagnose Axis I disorders. Five studies used a structured clinical interview tool, the SCID I or MINI-

DIPS. Kafka and Hennen (2002) used a semi-structured intake questionnaire and a clinical interview by a psychiatrist. Of note, the detention of sex offenders within forensic hospitals differs according to the different mental health laws for each country. For example in Germany and Austria, offenders are detained under penal law for therapeutic purposes, including primary diagnosis of substance abuse, unlike in the UK and USA. Therefore, this may influence the generalisability of the studies. All studies reported descriptive statistics and those comparing subgroups used statistical analysis including chi-squared test (Hoyer et al. 2001; Kafka & Hennen, 2002; Leue et al, 2004;) or 2-tailed Fisher exact test and Wilcoxon rank sum test (Dunsieth et al., 2004; McElroy, 1999). Only Leue et al. (2004) carried out interviews by two investigators and reported inter-rater reliability and Hoyer et al. (2001) reviewed the investigators' assessments by experienced supervisors.

Methodological quality of descriptive studies

Study objectives

These studies did not specifically focus on SA, but there were clearly reported questions regarding comorbidity of Axis I disorders in sex offenders. The specific questions were to understand mental illness within sex offending samples and reported SA comorbidity.

Selection bias

Two of the descriptive studies were scored 'highly likely' on selection bias process, due to being convenience samples from forensic hospitals. Three studies scored 'somewhat likely' due to samples drawn from clinics. The bias impairs the extent to which findings can be generalised across settings. All studies were part of an admission assessment for treatment, with the majority of participants either court ordered or referred for

treatment. Kafka and Hennen (2001) scored 'highly likely' as participants were voluntary patients seeking treatment. The exclusion criteria were not clearly defined; three studies excluded individuals with psychosis, neurological disorders or learning disabilities, which may impact on the representativeness of the group. Previous research indicates that schizophrenia and psychosis rates are 5-10% of general samples of sex offender population. Within psychiatric settings, rates are significantly higher, ranging from 50-100% (Stinson & Becker, 2011).

Detection bias

Detection bias was divided into four relevant factors: outcome, blinding, validity and reliability of outcome, and reliable measure of group allocation. Within these studies the outcome focus was Axis I disorders, five studies scored 'yes' for outcome defined, though Kafka and Hennen (2002) was considered inconclusive. Although SA prevalence was reported as an outcome, it was not clearly defined in these studies. All studies scored 'no' on blinding. It was inconclusive whether participants were blind to the study objective as it was part of treatment assessment. Only one study (Dunsieth, et al., 2004) acknowledged the limitation of the non-blinded bias.

The two studies using the MINI DIPS I reported the reliability. Four of the studies did not report reliability and validity were scored as 'no'. Although three of the studies used the SCID I, which has standardised validity and reliability documented in previous studies (Lobbestael, Leurgans & Arntz, 2011). Kafka and Hennen (2002) scored 'no' as they did not use a structure clinical tool to assess Axis I disorders, instead using a semi structured questionnaire and a follow up clinical interview by a Psychiatrist. Additionally, as there is no structured tool to diagnose sexual disorder by

diagnostic criteria defined by DSM-IV, four studies developed inventories based on the DSM-IV criteria, though there is no reliability or inter-rater reliability reported.

Confounders

Three studies were scored as inconclusive as they reported some confounders but did not report differences between groups, or did not report significance or impact on SA. Hoyer et al. (2001) and Leue et al. (2004) were scored as 'yes' because they identified confounders and matched samples or analysis, for age and length of incarceration. Within observational studies, confounders are an important factor. Although five studies reported the prevalence of lifetime substance misuse, the impact was not considered. Of note a higher prevalence of substance misuse may be due to German and Austrian laws treating sex offenders with substance misuse in hospitals rather than prison. Social desirability was not measured in any study. This may have impacted detection bias, due to sex offenders wishing to provide socially desirable responses or to access treatment which may be seen as more lenient than a prison sentence.

Statistical Bias

All studies used appropriate analytical methods considering the small sample sizes. However, none of the studies reported a power analysis or confidence intervals.

Results

Results indicate for current prevalence of SA in CCSO with paraphilia ranged from 23 - 23.3%. The lifetime prevalence of SA assessed in CCSO with paraphilia ranged from 13.1 - 53.3%. Overall, there was a stronger association with CCSO diagnosed with paraphilia to current and lifetime prevalence of SA. These are exploratory studies, and

reporting of information was limited.

Summary of psychometric (hypothesis driven) studies

The second type of studies in the review is hypothesis driven psychometric studies which considered the relationship between SA or the related component 'fear of negative evaluation' and sex offending. Of these eight studies, the countries of origin were Canada (3), Austria (3), Germany (1) and UK (1). Notably, all the studies from Austria were carried out by the same research group, which may introduce bias (Eher et al, 1999; 2001; 2003). Nunes et al. (2012) study 1 was included as it was completed separately from their meta-analysis (study 2). The studies took place between 1987 – 2012, and included sex offenders from various settings: forensic hospitals (4) and prisons (4). The total number of sex offenders was 465, with a mean sample size of 58, ranging from 30 - 97 participants per study. Sex offender groups were often further divided into subgroup categories, with average subgroup samples ranging from 22 - 42 sex offenders.

The studies' subgroups were defined by the following categories. Firstly, most studies defined samples mainly by offence type: CCSO versus rapists (Eher et al., 1999), or versus Internet child sex offenders (ICSO) (Marshall, O'Brien, Marshall, Booth & Davis, 2012), or versus incarcerated non-sex offenders (Horley, Quinsey & Jones, 1997; Nunes et al., 2012). In one study, Eher et al. (1999), sex offenders as a group were also divided according to violence level (high vs. low) (Wong, Lumsden, Fenton & Fenwick; 1994). Secondly, two studies compared subgroups of CCSO by defining groups by victim gender, as studies have found that 'boys only' victim type as a variable significantly contributed to sexual recidivism (Hanson, Steffy & Gauthier,

1993). Thirdly, sex offenders were defined by DSM-IV sexual disorders, compared participants with paraphilia versus impulse control disorders (Hoyer, Kunst, & Schmidt, 2001). Fourthly, Fiqia, Lang, Plutchik and Holden (1987) did not differentiate between CCSO and rapists. Finally, Eher, Fruehwald and Frottier (2003) defined sex offenders groups by typology on Massachusetts Treatment Center Child Molesters 3 (MTC: CM3; Knight & Prentky, 1990) to compare non-sexual rapist versus sexual rapist versus paedophilia.

Of the eight studies, five compared sex offenders to control groups, four of these studies with non-sexual offenders. All eight studies used self-report measures to assess SA or elements of it, e.g. fear of negative evaluation. All studies were cross-sectional and reported descriptive statistics and those comparing subgroups used statistical analysis: ANOVAS, MANOVAS, stepwise regression, t-tests, chi squared, correlation matrix, multi regression, product moment correlations, Bonferroni corrected post hoc and Scheffe tests.

Methodological quality of psychometric studies

Study objectives

All studies were scored 'yes' as the objectives and questions were clearly reported, although not all specifically focused on SA. For three studies, SA was a primary focus, for four studies SA was the secondary focus within a psychiatric co-morbidity focus and one study measured SA as a covariate.

Selection bias

Due to the nature of recruitment of sex offenders from different facilities (Prisons,

Forensic Hospitals), all studies were scored 'Highly likely'. This is likely to impact on the generalizability of these studies. The participation rate was often not reported, and when it was reported the drop out at this stage was very low, at less than the 20% norm e.g. 1%-7.3% (Eher et al., 2003; Horley et al., 1997).

Assessment and data collection

For three studies, the focus of the assessment was SA (Hoyer et al., 2001; Marshall et al., 2012; Nunes et al., 2012; study 1). In the remaining studies SA was a secondary outcome; some focused on psychiatric disorders including SA (Eher et al. 2001; Eher et al., 2003). Horley et al. (2001) measured SA as a possible covariate in their study. Eher et al. (1999) and Fiqia et al. (1987) focused on fear of evaluation and social skills. All studies clearly defined the outcomes. As all studies used self-report psychometric measures, therefore participants may have been aware of the research question, all were rated as 'can't say'. Validity and reliability of scales used was only reported in three studies, notably the more recent studies, which may indicate changes in report writing for journals, rather than the quality of the research per se. Although, it is of note these studies were within a forensic setting and none of the measures were validated within this setting.

Confounders

Within the studies there are a number of possible confounding factors. Two studies (Eher et al., 1999; Horley et al., 1997) were scored as "Can't say" in this regard, as they considered the number of incarcerations and level of violence; however the descriptive characteristics for sex offenders groups were reported as a group rather than subgroups. The remaining six studies were rated as 'yes' because these studies considered possible

confounding factors in the design with various comparison control groups and analysis of demographic characteristic, consideration of factors within the analysis to assess if differences existed between samples. However, no studies measured social desirability.

Statistical Bias

None of the studies reported a power calculation, therefore a medium effect size was assumed, as it is the most common size of effect within psychological research (Green, 1991). The power calculations offered by Cohen (1998) were used to judge whether these studies obtained sufficient power; by this measure all studies lacked sufficient power, due to the small sample sizes. Nunes et al. (2012) study 1 was the only one that reported effect size and confidence intervals. The effect sizes obtained by the other studies were calculated by the principle investigator, or sourced from Nunes et al.'s (2012) study 2 meta-analysis, due to one study means and standard deviations not being reported (Horley et al., 1997). Statistical analysis methods were appropriate and rated as 'yes' for all studies. Overall, the eight studies statistical bias was impacted the small sample size, lack of power analysis and lack of reporting of confidence intervals.

Results

The variety of comparisons and experiments makes comparing results difficult. It is hard to draw definitive conclusions about the prevalence of SA in this population. SA was found to be greater in CCSO who met the DSM IV criteria for paedophilia (Eher et al 2003) or met the DSM IV criteria for paraphilia (Hoyer et al., 2001) or CCSO with exclusively male victims. Eher et al. (1999) found fear of negative evaluation was greater in rapists. Fiqia et al. (1987) found sex offenders as a group were more socially anxious than violent offenders. Yet, contrary to these findings, three studies did not find

a significant difference between CCSO and violent offenders (Horley 1997; Nunes et al., 2012) or CCSO and ICSO (Marshall et al. 2012). Overall, these studies have utilised a variety of psychometric measures and different methods to allocate participants to comparison groups.

Summary of experimental (observational) studies

The final category of studies is experimental based, considering the link between SA and sex offending. In addition to self-report psychometrics, these studies also employed naturalistic behavioural experiments (Hopkins, 1993; Marshall, Barbaree & Ferandez; 1995; Overholser & Beck, 1986; Segal & Marshall, 1985) with measurements of SA via behavioural observation or physiological measures (e.g. Galvanic Skin Response). Of these four studies, the countries of origin were Canada (2), USA (1) and UK (1). These studies took place from 1985-1995 and included sex offenders from prisons (3) and outpatients (1).

The total number of sex offenders was 127, ranging from 8 to 55 participants per study. Participants were categorised into subgroup by offence type within these studies (CCSO or rapist) ranging from 12-20 per group. Marshall, Barbaree and Ferandez (1995) separated CCSO further by victim gender. Hopkins (1993) did not differentiate offence type, with a 'mixed' group of CCSOs and rapists. This is the only intervention study that utilised a waiting list control group. The other three studies compared CCSO with a variety of groups. Two studies compared sex offenders to three control groups: non-sex offender (prisoner) group, a non-offenders low socioeconomic status group, and either a high economic status group (Segal & Marshall, 1985), or minimal dater student group criteria (single and dated less than twice in the last month) proposed by

Arkowitz et al. (1975) (cited in Overholster & Beck, 1986). Marshall, Barbaree and Ferandez's (1995) control groups were community and a student group, excluding individuals who reported fantasy or enacted a sexual offence. The exclusion was 35% of the control samples. This was lower than typical exclusion base rate for this criterion, 42-61% in previous studies (Marshall et al. 1995).

All data in the studies are from a single time point/testing session and three studies reported demographic descriptive statistics and performed statistical analysis, except one (Hopkins, 1993). Studies comparing subgroups used statistical analysis: ANOVAS, correlation matrix, ANCOVA and Newman-Keuls test.

Methodological quality of experimental studies

Study objectives

Within the experimental studies, the focus was hetero-social skills, social skills and social competence. In three studies, the objectives and questions were clearly reported, although not specifically focused on SA, which was a secondary outcome. Hopkins (1993) was scored as 'no' as the aims of the group were reported, rather than the aim of the study.

Selection bias

Three studies were rated as 'highly likely' as the participants were selected from prison settings of different levels of security. Hopkins (1993) did not describe the referral process for the group, or indicate participation rate. Marshall, Barbarbee and Ferendez (1995) was scored as 'somewhat likely' as sex offenders were recruited from an outpatient clinic and matched with SES controls. The exclusion criteria for controls

were previous fantasies or enactment of a sex offence, reporting an exclusion of 33% of the control sample. Participation rate was not reported but it is probable that this was high due to payment made to non-offenders and the mandatory nature of treatment in prison settings.

Assessment and data collection

The unique quality of these studies is the multiple methods of outcome assessment, which increases confidence in the data when the construct is measured more than once: all studies score 'yes' on this factor. Two studies reported inter-judge reliability for observations (Overholster & Beck, 1986; Segal & Marshall, 1985) and one study had six independent rater-scored observed behaviours (Hopkins, 1993). Due to the nature of the experiments, three studies which included blinded assessors of anxious behaviour were scored 'yes' (Hopkins, 1993; Overholster & Beck, 1986; Segal & Marshall, 1985). Hopkins et al. (1993) was a group intervention evaluation, therefore it is possible participants were aware of the aim of the research. The other studies do not report if participants were blind to the research question.

The reliability and validity of the measures used by the studies was scored as 'no' for three studies due to lack of reporting, though of note standardised psychometrics were used, though were not validated within this a forensic setting. Marshall et al. (1995) reported reliability and validity. All the studies used self-report measures but no studies measured social desirability.

Confounders

Three of the studies were scored as 'Yes', as possible confounding factors were

considered and employed matched control groups in the design. Only Overholser and Beck (1986) matched groups on multiple demographics variables including length of incarceration, due to possible incarceration effects or social stigma related to being in contact with criminal justice services. Marshall et al. (1995) reported co-varying age as a factor in previous studies and in the present research did not affect the outcome of the analysis on the dependent variables. Hopkins (1993) did not report demographic statistics or confounders in their study; although a waiting list control group was utilised, reporting of variables was omitted therefore the study scored 'no'.

Statistical Bias

Three studies score 'Yes' for sufficient power, appropriate analytical methods and reporting confidence levels, though did not report effect size. Hopkins (1993) scored 'no' for all factors due to an extremely small sample and no statistical analyses.

Results of studies

These innovative experimental studies utilised a variety of original methods to measure SA and social skills in sex offending samples. From the studies it is suggested CCSO have greater SA than rapists, non-offenders and community controls. However, there is not a significant difference between community controls with low SES and outpatient sex offenders (Marshall et al., 1995). In addition, these sex offenders were only considered by offence type with no consideration for diagnosis of paraphilia or Impulse control disorders.

Table 1.3 Quality ratings for criteria of studies.

Author	Internal Validity													
	Study Objective	Selection Bias		Detection Bias							Confounder	Statistical Bias		
		Selection Process representative	Participation rate	Outcome Defined	Blinded Assessor	Blinded Participant: Aware of research question?	Acknowledge limitation of binding	Measure of group allocation	Validity & reliability	Outcome measured more than once	Identified and taken into account in design or analysis.	Power reported	Analytical methods appropriate	Confidence intervals reported
OPTIMUM REPONSE	YES	NOT LIKELY	YES	YES	YES	YES	N/A	YES	YES	YES	YES	YES	YES	YES
Dunsieth, et al. (2004)	Yes	Somewhat likely	No	Yes	No	Can't say	Yes	Can't say	No	No	Can't say	No	Yes	No
Hoyer et al., (2001) Study 2	Yes	Highly likely	No	Yes	No	Can't say	No	Yes	Yes	Yes	Yes	No	Yes	No
Kafka and Hennen, (2002)	Yes	Highly likely	No	Can't say	No	Can't say	No	Can't say	No	No	Can't say	No	Yes	Yes
Leue et al. (2004)	Yes	Highly likely	Yes	Yes	No	Can't say	No	Yes	Yes	No	Yes	No	Yes	No
McElroy et al., (1999)	Yes	Somewhat Likely	No	Yes	No	Can't say	No	Can't say	No	No	Can't say	No	Yes	No
Raymond et al. (1999)	Yes	Somewhat likely	N/A	Yes	No	Can't say	No	Can't say	No	No	N/A	No	No	No
Eher et al. (1999)	Yes	Highly likely	No	Yes	N/A	Can't say	No	Yes	No	Yes	Can't say	NO	Yes	No
Eher et al. (2001)	Yes	Highly likely	No	Yes	N/A	Can't say	Yes	Yes	No	Yes	Yes	No	Yes	No
Eher et al. (2003)	Yes	Highly likely	Yes	Yes	N/A	Can't say	No	Yes	No	Yes	Yes	No	Yes	No

Author	Internal Validity													
		Selection Bias		Detection Bias							Confounder	Statistical Bias		
	Study Objective	Selection Process representative	Participation rate	Outcome Defined	Blinded Assessor	Blinded Participant: Aware of research question?	Acknowledge limitation of binding	Measure of group allocation	Validity & reliability	Outcome measured more than once	Identified and taken into account in design or analysis.	Power reported	Analytical methods appropriate	Confidence intervals reported
Fiqia et al. (1987)	Yes	Highly likely	No	Yes	N/A	Can't say	No	Yes	No	Yes	Yes	No	Yes	No
Horley et al. (1997)	Yes	Highly likely	Yes	Yes	N/A	Can't say	No	No	No	No	N/A	No	Yes	No
Hoyer et al. (2001) Study 1	Yes	Highly likely	No	Yes	N/A	Can't say	No	Yes	Yes	Yes	Yes	No	Yes	No
Marshall et al. (2012)	Yes	Highly likely	No	Yes	N/A	Can't say	No	Yes	Yes	No	Yes	No	Yes	No
Nunes et al. (2012)	Yes	Highly likely	No	Yes	N/A	Can't say	No	Yes	Yes	No	Yes	No	Yes	Yes
Hopkins et al. (1993)	Yes	Highly likely	No	Yes	Yes	Can't say	N/A	No	No	Yes	No	No	No	No
Marshall et al., (1995)	Yes	Somewhat likely	Yes	Yes	N/A	Can't say	N/A	Yes	Yes	Yes	Yes	No	Yes	No
Overholser and Beck (1986)	Yes	Highly likely	No	Yes	Yes	Can't say	N/A	Yes	No	Yes	Yes	No	Yes	No
Segal and Marshall, (1985)	Yes	Highly likely	No	Yes	Yes	Can't say	N/A	Yes	No	Yes	Yes	No	Yes	No

Table 1.4 Summary table of overall rating for quality of studies. Based on the amalgamation of criteria ratings and effect sizes calculated.

Author (year)	Study type	How well minimise bias	Considering statistical bias, sample size and power, what is the degree of association?	Are results applicable to sex offender population?
Dunsieth et al. (2004)	Descriptive	**Low**	**Inconclusive** No statistical analysis between variables	Yes
Hoyer et al. (2001) Study 2	Descriptive	**Acceptable**	**Inconclusive** No statistical analysis between variables	Yes
Kafka and Hennen (2002)	Descriptive	**Low**	**Inconclusive** No statistical analysis between variables	Yes
Leue et al. (2004)	Descriptive	**Acceptable**	**Inconclusive** No statistical analysis between variables	Yes
McElroy et al. (1999)	Descriptive	**Low**	**Inconclusive** No statistical analysis between variables	Yes
Raymond et al. (1999)	Descriptive	**Low**	**Inconclusive** No statistical analysis between variables	Yes
Eher et al. (1999)	Psychometric	**Acceptable**	**Inconclusive** (data not reported)	Yes
Eher et al. (2001)	Psychometric	**Acceptable**	**Inconclusive** (data not reported).	Yes
Eher et al. (2003)	Psychometric	**Acceptable**	**Moderate** SIAS: CCSO & Rapist (sexualised) d= .45, CCSO & Rapist non sexual) d= .52 SPS: CCSO & Rapist (sexualised) d=.27, CCSO & Rapist non sexual) d=.51	Yes
Fiqia et al. (1987)	Psychometric	**Acceptable**	**Moderate** Social anxiety: Sex offender & NSO d= .51 FNE: Sex offender & NSO d= .46	Yes
Horley et al. (1997)	Psychometric	**Low**	**Weak** No means of SAD reported. No significant difference between groups	No

			Effect size (Nunes et al., 2012) CCSO & NSO *d*= .12	
Author (year)	**Study type**	**How well minimise bias**	**Considering statistical bias, sample size and power, what is the degree of association?**	**Are results applicable to sex offender population?**
Hoyer et al. (2001) Study 1	Psychometric	**Acceptable**	**Moderate** SAIS: PA & ICD (*d*= .43); PA & NSO (*d*= .62); ICD & NSO (*d*=.15) SPS: PA & ICD (*d*= .14); PA & NSO (*d*=.36); ICD & NSO (*d*=.17)	Yes
Marshall et al. (2012)	Psychometric	**Acceptable**	**Weak** CCSO & ICSO (*d*=.14)	Yes
Nunes et al. (2012)	Psychometric	**Acceptable**	**Weak** CCSO & NSO (*d*=.03)	Yes
Hopkins et al. (1993)	Experimental	**Acceptable**	**Weak** (Limited sample and analysis, unable to calculate effect size)	Inconclusive
Marshall et al. (1995)	Experimental	**Acceptable**	**Moderate** Effect size on SADS CCSO(male victim) & rapist (*d*=0.43); CCSO(female victim) & rapist (*d*=0 .84); CCSO (m) &. NO(uni) (*d*=0.64); CCSO (f) &. NO(uni) (*d*=1.10); CCSO (m) &. NO (SES) (*d*=0.04); CCSO (f) &. NO (SES) (*d*= 0.43)	Yes
Overholser and Beck (1986)	Experimental	**Acceptable**	**Weak/ Inconclusive** Effect size unable to calculate for psychometrics. For behavioural assessment of anxiety: CCSO(ex) & Rapist: control (*d*= 0.04) during role play (*d*= 0.07); CCSO (ex) & NSO control (*d*= 1.2) during role play (*d*= 0.15); CCSO (ex) & NO (low SES) control (*d*= 0.37) during role play (*d*= 0.34); CCSO (ex) & NO (minimal dater) (*d*=1.1) during role play (*d*= 1.1)	Yes
Segal and Marshall, (1985)	Experimental	**Acceptable**	**Strong** Effect size on SADS CCSO & SOA (*d*= 0.86); CCSO & NSO (*d*=0.64); CCSO & NO(high ses) (*d*= 0.86); CCSO & NO(low ses)(*d*= 0.86)	Yes

Abbreviations: Disorders: PA: Paraphilia; PRD: Paraphilia related disorder, NP: Non-paraphilia, ICD: Impulse control disorder.
Offender type: CCSO: Contact Child Sex Offender; ICSO: Internet Child Sex Offender; NSO: Non-sex offender; NO: Non-offender, SES: Socioeconomic

Discussion

Theories of sexual offenders against children have highlighted social skills deficits, social avoidance or fear of negative evaluation as relevant factors in the development and maintenance of sexual offending (Ward, Polaschek & Beech 2006). The systematic review suggests a possible association of SA with CCSO. This is supported by the recent meta-analysis study by Nunes et al. (2012). The current literature review widened the scope of the search, considering multiple methodologies and research designs, thus identifying eighteen studies. Eight of the eighteen studies were rated inconclusive on the quality tool to show a statistical association between social anxiety and sex offending due to statistical bias, sample size and power. Of the remaining ten studies, one study had a strong statistical association, four studies had a moderate statistical association and five studies were weak statistical association. Four of the weak statistical association studies showed no significant difference between groups on social anxiety factors. In total fourteen studies found a significant difference between groups on social anxiety, however only five of these were rated acceptable quality and moderate to strong statistical association.

This systematic review investigated the primary research on SA and sex offenders to identify methodological inconsistencies within the literature, including lack of consistency in selection of comparison groups, lack of power, small sample sizes, limited reporting of effect size and a variety of measures to assess SA. However, many of these studies predate 2000 and are exploratory in nature. Over recent years behavioural researchers have a greater awareness of the importance of power analysis and recommendations to always report effect size (McGrath & Meyer, 2006), raising the requirement for further high quality research.

Strengths and weaknesses

Sample characteristics and heterogeneity

A conceptual problem in sex offending literature concerns the heterogeneity of sex offenders and this is widely recognised (Stinson, Becker & Sales, 2008). The range of studies reviewed has compared CCSOs to multiple groups that differed in relation to nature of offence, victim characteristics and number of offences. Within the current review sex offenders were categorised into different typologies or classifications, most commonly by legal definition (offence type). However, comparisons were also made by diagnosis of sexual disorders on DSM-IV criteria or by Massachusetts Treatment Center: Child Molester Typology, versions 3 (MCT: CM3; Knight & Prentky, 1990) based on offender characteristics (e.g. victim gender, level of fixation, level of social competence). Therefore, it is inconclusive if the function of deviant sexual behaviour and the role of SA may vary across these across these groups; there is some evidence for a greater association with paraphilia.

The evaluation of DSM-IV sexual disorders was not included in the SCID questions, therefore authors developed inventories to diagnosis and categorise sex offenders based on DSM-IV criteria. Therefore, there is a lack of consistency in the assessment of paraphilias. Interestingly, Marshall (2007) critically appraises DSM diagnoses of the paraphilias relevant to sexual offenders, and recommends a continuum approach along dimensions, rating the features of each type of sex offender from normal to seriously problematic. Furthermore, DSM-IV was used as a global definition of paraphilia and within studies specific paraphilias were often not described. The MCT:CM3 provides a definitional 'purer' group for research purposes but its

complexity makes it unsuitable for clinical settings. Therefore, there is no universal agreement on the most comprehensive categorisation, thus leading to researchers defining participants by multiple ways, making the task of comparing studies more difficult. For clinical practice this makes evidence based treatments difficult to operationalise.

Classification and diagnosis

Another relevant issue is the diagnosis of SA. The Diagnostic and Statistical Manual of Mental Disorders (APA, 2000) criteria have undergone developments over the years. SAD was the last anxiety disorder to be added to the DSM-III, with alterations in later editions to SAD in order to clearly define the disorder and assist differential diagnosis. Specifically the descriptive studies in this review, which utilised DSM-IV, will have greater clinical accuracy and specificity than other methods for assessing social anxiety. However, there are potential implications if the criteria used to assess SAD have changed over the years, which may have led to different criteria being used in the different publications reviewed. The prevalence of current and lifetime SAD was associated with paraphilia groups, with SAD the most prevalent anxiety disorder. Interestingly three studies reported lifetime prevalence of SAD in participants with paraphilia, which provide a temporal dimension and highlight the possible onset of SAD pre-offence.

Comparison to the prevalence of social anxiety within the general population estimate approximately 7.1% and 12.1%, 12 month and lifetime, respectively have social anxiety (Kessler et al., 2005). Therefore, the prevalence rates reported within five of the descriptive studies indicate sex offenders with a diagnosis of paraphilia have a

higher prevalence rate than the general population; however sex offenders with paraphilia related disorders or impulse control disorders, the prevalence of social anxiety were similar to the general population. Studies did not consider the developmental and background factors in sex offenders, in particular, previous experiences of neglect, deprivation or abuse (physical or sexual). Literature in the general population suggests early life experiences of sexual, physical and emotional abuse increase the risk of developing anxiety disorders (Kuo, Goldin, Werner, Heimberg & Gross, 2011). Davis and Leitenberg (1987) estimate 19 to 58 per cent of sex offenders have been victims of physical or sexual abuse. Suggestions of potential mechanisms or a third factor to support the sexually abused–sexual abuser hypothesis, as sex offenders compared with non-sex offenders showed increased likelihood of having experienced child sexual abuse, while both were equally likely to have experienced physical abuse (Jespersen, Lalumiere & Seto, 2009). These factors promote the development of poor coping skills and increase an individual's vulnerability for developing mental health disorders (Kuo et al., 2011). Adolescence is a critical time period for sexual development, and the early onset of social anxiety may play a role in the development of sexual preferences or disorders i.e. paraphilia (Jerpersen, Lalumiere & Seto, 2009; Marshall & Barbaree, 1990).

Sample selection and generalizability

The varied research designs in this review have a common theme in that neither diagnostic prevalence studies nor the quantitative analysis, explicitly demonstrate causality due to the correlational nature of the studies. Therefore, there is still much to be learnt. The sample sizes across the studies examined were small, therefore may have insufficient power to detect significant differences when they exist. Additionally, the

majority of studies were conducted within correctional or mental health facilities, either incarcerated or seeking treatment sex offenders. Increasing the likelihood of selection bias and reducing generalizability to the wider sex offender population.

The majority of the research was conducted in North America (ten out of eighteen studies) which may have an impact on generalisability to other countries. Populations in mental health facilities will be influenced by the different detention laws for mental illness, for example German law (German Penal Law§64: Custodial addiction treatment order) detains sex offenders for treatment of substance misuse within mental health facilities, which may skew results as anxiety disorders are often related to substance misuse (Fatseas, Denis, Lavie & Auriacombe 2010). Also, the exclusion of some participants within these settings (psychosis, Learning Disability etc.) may result in a less representative sample. Recruitment from correctional facilities, have practical and convenience advantages but may skew the samples to high-risk sex offenders. Of note, the research focus is solely on convicted sex offenders, and while it is extremely beneficial to assist understanding of this population for clinical working across settings, conclusions about non-convicted sex offenders cannot be drawn from this population. The current studies may be qualitatively different from non-convicted sex offenders, due to the process of arrest, and the impact of negative social consequences.

Some studies clearly had an overlap of participant data (McElroy et al., 1999; Dunseith et al., 2004) and others acknowledge potential overlap of research teams accessing the same participants (study 1 and study 2; Hoyer et al, 2001). The majority of the studies in the review used a variety of comparison groups. A limitation of these

groups is the questionability of how accurately these groups were matched and if researchers or confederates were blind to group allocation. The most appropriate comparison group to demonstrate that SA is unique to sex offenders, is to compare with non-sexual offenders, therefore matching for the effect of being convicted and incarceration effects; only five studies included a non-sex offender group. Therefore, this has limited value for clinicians for evidence based assessment and formulation, if the SA is related to environmental factors of prison.

Measures

Only a few studies in this area have specifically focused on the link between SA and sex offenders. Many studies in the area were conducted in the 1980's and 1990's, as exploratory studies of Axis I or experimental studies focusing on heterosexual skills. Evident from the three groups of studies in this review is a lack of consistent methodology. Eight studies relied solely on self-report measure, leading to limitations e.g. poor recall, deception or literacy problems. Twelve studies did not report whether psychometric measures were reliable and valid, though the majority of measures were known from other research to be valid and reliable. Interestingly, nine studies used multiple methods to assess SA, which is advantageous as it increases the validity of results.

Additionally, studies systematically failed to report power and inadequately report statistical analysis. Lack of detailed reporting in studies can have an impact on the assessment of study quality, and requires caution when interpreting results. Additionally, social desirability was not measured in any study and may be considered useful in future assessments, due to the sex offenders wishing to provide socially

desirable responses or to access treatment that is more lenient.

Implications for treatment

Social anxiety effects interpersonal relationships and maintains social fears (Alden and Taylor, 2004). SAD is a risk factor for subsequent depression and substance misuse (Stein, 2008). Commonly SAD has an early age of onset of 11 years for 50% and by 20 years for 80% of individuals (Stein, 2008). Yet, due to the nature of the disorder, individuals are less likely to seek psychological treatment. This review indicated possible evidence of the prevalence of SA in CCSOs. Thus, it is important for clinicians to consider SA within clinical assessment of psychological needs and risk assessment within this group. Within clinical practice, screening psychometric instruments can be used with the caveat that they may not identify lifetime diagnosis, as they only focus on the present/recent experiences. A follow up structured clinical interview will provide a lifetime presence of the disorder (Hoyer et al., 2001).

SAD may lead to difficulties participating in treatment groups to address offending behaviour, requiring prior psychological treatment to address SAD or individual offence focused work. Differential diagnosis from other disorders, e.g. avoidant personality disorder, autistic spectrum disorder and substance misuse, which have similar presentations of isolation and limited social interaction, should also be considered. Marshall and Barbaree (1990) argued that 'one size does not fit all' for CCSOs. This review highlights SA is present within CCSO subgroups, though it is not consistent across all sex offenders and may be more relevant to those with paraphilia, highlighting the importance of individual assessment. CCSOs come to the attention of professionals in a variety of settings (e.g. Social Work, Mental Health and prison).

Clinicians should be aware of SA in an assessment and the possible relevance in terms of treatment, such as impact on engagement in treatment to improve quality of life, self-esteem and social isolation.

Healthcare services in Scotland have responsibility for prisoner healthcare, and within this setting, interventions should consider also decreasing distress linked to SA, improving quality of life and indirectly managing risk. This review highlights the possible presence of social anxiety in CCSOs. Therefore, it is crucial to improve our understandings of clinical and psychiatric problems within this population, as there needs to be evidence based practice and clinical governance.

Future research

Due to the heterogeneous nature of sex offender groups, categorisation is a challenge for researchers. The majority of research in this area is prior to 2005, with the exception of Marshall et al. (2012) and Nunes et al. (2012), which raises the question why research ceased in this area and importantly why the recent renewal of interest. Luisser and Cale (2013) suggest research within sex offending has had an almost exclusive focus on risk assessment and management. The results of this review warrant further research and replication on a larger scale of the more methodologically sound studies on SA and sex offending.

Obstacles to completing high quality research, such as randomised control trials within the sex offending area, include claims that they are unethical because of withholding treatment in control groups (Marshall & Marshall, 2007). Seto et al. (2008) disagree, stating that for good clinical practice RCT studies within sex offending

populations are scientifically and ethically required. This could have implications for treatments offered and the applicability of existing treatment evidence bases i.e. whether the evidence is applicable. This study found the categorisation of offender type requires a systematic approach and methodological quality needs to be improved. Many issues present in the studies may be due to lack of reporting important methodological criteria. Guidelines for reporting results of observational studies now recommend reporting effect sizes, power calculations and confidence intervals (McGrath & Meyer, 2006).

Secondly, although theories regarding SA and CCSOs are based on observational studies they suggest that some individuals affected by SA may sexually abuse children as they have limited opportunities and abilities to have their sexual and emotional needs met by appropriate adult partners (Ward, Polaschek & Beech, 2006). However, it is possible that SA may be an etiological factor in offending or a consequence and a maintaining factor of offending. Potential research focusing on lifetime diagnosis or longitudinal research would provide further evidence.

Conclusion

The results of this review indicate that research in the area was mainly undertaken prior to 2001, with only two recent studies. The lack of research may be due to the almost exclusive focus on risk within sex offending literature. Given the methodological issues and the potential implications for treatment and risk management, further research would be recommended to examine SA within CCSO. These studies indicate a possible link with SA and CCSO; this association was stronger in individuals diagnosed with paraphilia. Some studies with an experimental approach controlled for confounding factors (e.g. socio economic status, minimal daters, length of incarceration) via control

groups or within statistical analysis, finding these variables had a strong association with SA; however it is not clear if they had an impact. This indicates environmental and background variables may play a significant role in SA prevalence in this population. Further research is recommended which focuses on SA considering clearly defined sex offender groups, experience of emotions and background variables, such as childhood trauma, socio-economic status etc. The consideration of these would produce a greater knowledge of the association and impact of SA within the sex offender population. SA has direct theoretical links to understanding some sex offenders' psychological deficits; this review highlights the importance of assessing for SA, with implications for treatment.

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Chapter II

Background to research paper and original research plan

Background to research

Individuals with social anxiety disorder fear and avoid the scrutiny of others due to a fear of negative evaluation, fear of social interaction and fear of attracting attention. Features similar to these have been identified in Internet child sex offenders (ICSOs), e.g. interpersonal difficulties (Bates & Metcalf, 2007). Marshall et al. (2012) speculated that social anxiety is a unique feature of ICSOs. However, in their study they found no significant difference in social anxiety between ICSOs and contact child sex offenders (CCSOs). Yet within the preceding systematic review of sex offending and social anxiety, which included studies with a range of methods, social anxiety was higher in individuals with a paraphilia diagnosis within CCSO samples. Interestingly, Seto (2010) suggested that the persistent viewing of indecent images online should be considered as part of the diagnosis for paedophilia.

Despite the growing conviction rate in accessing, downloading or distributing child pornography through the Internet (Wolak, Finkelhor & Mitchell, 2011), there is a lack of evidence on which to base assessments of functional psychological processes. The following study (Chapter 3) sought to build further upon theoretical knowledge to inform the assessment and treatment of clinical needs. In particular, it replicated and modified Marshall et al.'s (2012) study, which focused on social phobia (also known as social anxiety), obsessive-compulsive disorder and loneliness.

Previous research has focused on Internet sex offenders' behavioural characteristics or motivation; however, avoidant strategies may have become maladaptive strategies for coping with negative affect (Hofmann & Kashdan, 2009). Marshall et al. (2012) presented tentative results of a North American incarcerated

population of ICSOs compared to CCSOs, constituting an initial attempt to ascertain unique features of Internet sex offenders. They reported greater levels of loneliness and OCD in ICSOs, however there was no significant difference on a measure of social anxiety. Interestingly, within their study ICSOs' mean score met the diagnostic criteria for social anxiety (Marshall et al. 2012).

Original research plan

The study presented in the next chapter originally proposed to expand the comparison groups to examine loneliness, obsessive-compulsive and social anxiety features in ICSOs compared to CCSO, non-sexual offenders and non-offenders within the UK. It was hypothesised that these characteristics may be involved in the development and maintenance of Internet child pornography related offences. An additional consideration was to examine the implication of the relationship between problematic internet use and social anxiety.

Selection of measures in empirical study

Intimacy and relationship deficits have been found to be etiological factors of sexualised behaviours in sex offenders (Bumby & Hanson, 1997; Ward & Beech, 2006). Grady, Brodersen and Abramson (2011) demonstrate there are few valid and reliable instruments to accurately assess these deficits in sex offenders. There are limited clinical measures that are validated with ICSOs (Sullivan and beech 2002) and few specialized tools for ICSOs (Hammond, 2004). For researchers and clinicians, accurate valid and reliable tools within this population would create an individualised evaluation of specific deficits rather than a one size fits all approach. Primarily this current study was a replication and modification of Marshall et al. (2012) study therefore the deficits measured were governed by this. Only one scale in the Marshall et al. (2012) study was

used and the other measures were replaced. In addition, measures of social desirability and problematic internet use were included. The justification for the selection of measures will be discussed.

Measures

Social Interaction Phobia Scale (SIPS) (Carleton, Collimore, Asmundson, McCabe, Rowa, & Antony, 2009).

The systematic review on social anxiety and sex offending was completed in parallel with the empirical study, highlighting questionnaires are often used for screening purposes and therefore structured clinical interviews or behavioural observations of social anxiety would validate and complement the results of the empirical study. The Social Phobia Inventory (SPIN) (Connor, Davidson, Churchill, Sherwood, Foa & Wesler, 2000) was used by Marshall et al. (2012) found no significant difference between the groups on social anxiety. In the SPIN there are a number of items which may skew results within offender populations, these were two items out of seventeen regarding authority e.g. participants were asked to rate distress in relation to 'fear of people in authority' and 'fear of talking to someone in authority'. Additionally, this scale requests participants to acknowledge distress from physical symptoms sweating, palpitations and trembling or shaking. Within research, CCSOs have been shown to have difficulties recognising the emotional states of adults as well as children (Hudson et al., 1993). From the author's clinical experience, offenders are often reluctant to disclose information that may be viewed as vulnerabilities, instead presenting a macho persona.

The Social Interaction and Phobia Scale (SIPS) was selected in the current study as a measure of fear associated with social interaction and performance situations specific to social anxiety (SA). It was developed by exploratory and confirmatory factor analysis of the Social Interaction Anxiety Scale (SIAS) and Social Phobia Scale (SPS; Mattick & Clarke, 1998), the most commonly used scales in the systematic review. The SIPS is short scale with three subscales measuring symptoms of SA: fear of attracting attention, social interaction anxiety and fear of overt evaluation. These factors were considered relevant in the study of social anxiety within sex offender groups. With excellent internal consistency in clinical samples (α=.92) with evidence of factorial stability, convergent validity and discriminant validity (Carleton et al., 2009).

Obsessive-Compulsive Inventory-Revised (OCI-R) (Foa et al., 2002)

This widely utilised scale evaluates distress associated with obsessions and compulsions. The OCI-R is highly correlated with the longer version OCI (42 items; Foa et al., 1998) and in both clinical and non-clinical samples, total score and subscales have good to excellent, test–retest reliability, convergent validity and internal consistency (Foa et al., 2002). This scale was utilised by Marshall et al. (2012) study and found a significant difference between groups, therefore it was predicted this difference would be maintained across cultures in the current study.

UCLA Loneliness Scale: Version 3 (Russell, 1996)

The UCLA Loneliness Scale Revised (Russell, 1996) is a widely reported loneliness instrument in the literature, and is designed to identify feelings of loneliness, in particular in relation their experience of adult relationships. "Normative data have also been identified for sexual offenders, violent offenders, and general offenders" (Keeling et al., 2006, p. 379), establishing a strong applicability to this current study of sex

offenders. In comparison to the UCLA version II (Russell, 1980) utilised by Marshall et al. (2012), the version 3 was selected in this study as it consists of positively worded (non-lonely) items and negatively worded (lonely) items, eliminating double negatively worded items and simplifying wording of items of previous versions, thus reducing comprehension bias. Additionally, it is internally consistent, short and easy to administer.

In addition to the constructs considered by Marshall et al. (2012) study, two further constructs were also measured, social desirability and problematic internet use, as important factors to consider within the ICSO group.

Problematic internet use, Online Cognition Scale (OCS): short version (Jia & Jia, 2009). In general, forms of problematic internet use are a multidimensional overuse of the internet. Individuals presenting with 'internet addiction' have difficulties with social isolation, intimacy deficits, loneliness, depression and anxiety (Burgess, Mahoney, Visk & Morgenbesser, 2008). Shepherd and Edelmann (2005) demonstrated that social anxiety could affect internet use as it enables individuals to avoid face-to-face communication. The internet has provided the resources to create virtual communities by enabling anonymity, and by providing instant access to discuss sexual interests and communal support (Gottshalk, 2011). Copper (1998) describes this as the 'triple A', availability, affordability and anonymity, these factors of the internet environment may trigger behaviours normally suppressed by social constraints (Barak, 2005). ''Pathological Internet Use'' (Davis, 2001) suggests the internet triggers a compulsive reaction. There is a prerequisite to understand a cyberpsychology perspective, for

example disinhibition (Suler, 2004) and dependency, as clinical factors, which may influence assessment and treatment of ICSO.

In the current study the addition of the non-offending population group required a second ethical approval stage. At this point the measurement of problematic internet use was added as an additional factor. However, the ISCO group have no access to the internet post arrest and their computer is removed from their home, therefore it is not possible to measure the length of time ICSOs spent on the internet during the timeframe of the current study. Therefore, the shortened version Online Cognitions Scale (Jai & Jai, 2009) was selected to assess problematic internet use, this measure had already been administered to the offender groups recruited by a parallel study (Qualye & Newman, in press). Davis (2002) introduced a multidimensional, cognitive-behavioural theory driven measure of problematic Internet use, Jai and Jai (2009) further refined this measure by highlighting domains of dependency and distraction as core features. The OCS was developed from confirmatory factor analysis of the 36 item, four-factor OCS (Davis, 2001). The shortened version consists of two factors Distraction and Dependency. It is efficient and exhibits satisfactory factorial validity and one of the few Problematic internet use measures to be shown to be robust in non-student populations (Jai & Jai, 2009).

Social Desirability Scale (SDS), (Crowne & Marlowe, 1960)

Many studies of sex offenders often report a measurement of social desirability or control for it with adjustments (Elliot, Beech & Mandeville-Norden, 2008). Within the current study, Social Desirability Scale (SDS) (Crowne & Marlowe, 1960) was included as sex offenders' completion of self-report scales is susceptible to social desirability

(Tan & Grace, 2008). It evaluates the tendency for individuals to respond in a socially desirable manner, to provide overly positive self-descriptions (Crowne-Marlowe, 1960). Andrews and Meyer (2003) produced forensic norms for the scale, indicating offenders' scores are generally higher than compared to a non-forensic population. Additionally, this scale is cost-effective, has excellent internal consistency (α=.88) and test-retest reliability (r=.89) (Crowne & Marlowe, 1960). The empirical study planned to statistically adjust for social desirability between the groups.

Original research power analysis

Previous research in this area (Marshall et al., 2012) reported significant differences between ICSOs (n=30) and CCSOs (n=30). Their effect sizes have been calculated as medium sized (Cohen, 1992) for loneliness (d= 0.6.49) and OCD (d=0.827), however the effect size for social anxiety (d=0.144) was small according to Cohen (1992). Wall et al.'s (2011) study of emotional avoidance in Internet Offenders in the UK, reported medium effect sizes with a sample size of 83. The sample consisted of 15 Internet sex offenders, 18 contact sex offenders, 25 non-sexual offenders and 25 non-offenders. Overall the ANOVA were not significant, however when offending groups were compared to non-offending controls there was a significant difference on emotional avoidance.

A power analysis was therefore conducted to estimate the sample size required to reveal differences in social anxiety, loneliness and obsessive-compulsiveness between the four groups: ICSOs, CCSOs, non-sexual offenders and non-offenders. According to G*Power, 45 participants would be required in each group to achieve a

medium effect size (f=.25) with an alpha error probability of .05 and a power value of .8 (beta error), requiring a sample size of at least 180.

Recruitment

The study design planned to achieve these numbers via Community Criminal Justice Social Work (CJSW), the prison service, Stop It Now! (Voluntary organisation) for the recruitment of offenders, and a snowballing email method for the recruitment of non-offenders. Ethical approval was granted to access potential participants via CJSW and Stop It Now! the community Internet offender group. Managers were approached and arrangements made to disseminate the questionnaires to facilitators of Internet Offender group and Criminal Justice Supervising Officers (in Scotland CJSW supervising officers carry out a similar role to Parole officers in other jurisdictions in the UK).

CJSW departments in five district areas were involved, and in total 62 Criminal Justice Supervising officers were approached. CJSW Supervising officers meet with sex offenders on their caseload at least fortnightly as a requirement of supervising sex offenders in the community. Within CJSW teams there are approximately 60-90 sex offenders being supervised. Each treatment group of Stop It Now! Inform Plus programme has eight ICSO participants, and eight ICSO on the waiting list and 40 individuals who have completed treatment with the Stop It Now service previously.

One CJSW district was unable to facilitate the research due other on-going research in the department. An ethics application for the prison service was made and rejected due to perceived high staff input to the project. Unfortunately, due to small numbers recruited in the CCSO (n=5), mixed group (ICSO and CCSO) (n=4) and non-

sexual violent offender group (n=7) these groups were excluded from the study. Non-offenders were matched to ICSO group by age and ethnicity, 123 Non-offenders were excluded from the study. Collected data for excluded participants on demographics and measures (means and standard deviations) are in appendix B.3.

Barriers within services to recruitment of offender groups for research:

The media, public concerns and children's charities have driven political focus on internet offending and availability of child abuse images. There is a requirement for government policies to balance public safety and individual well-being. The Scottish government's Strategy for Justice (2012) describes an outcomes-focused and evidence-based approach to justice, providing 'national guidance and support for the Multi-Agency Public Protection Arrangements which are in place to manage the risks posed by registered sex offenders' (p.p.45). Prevention and greater interagency working for the management of sex offenders through Multi Agency Public Protection Arrangements (MAPPA), is a holistic framework for interagency involvement and information sharing between services in assessing and managing sex offenders, to protect the public from violent and dangerous offenders. In particular this has led to the greater involvement from the health service to provide psychological input on risk assessment and management strategies to criminal justice services, considering personality disorder and mental health clinical issues. Understanding why individuals sexually offend to reduce risk and improve clinical interventions has been a driving force for research in the sex offender literature.

This current study aimed to build on the evidence base within the area of ICSOs, to compare to a non-offending sample and offender samples of contact child sex offenders and violent offenders. The principle researcher had developed links within

criminal justice services via interagency working, however upon reflection not directly working within the prison service and criminal justice social work may have hindered the recruitment. There were a number of limitations within the area, which are important to highlight for future research to assist in the recruitment of larger samples. It was highlighted via feedback from offenders, who did not wish to participate in the current study, viewed research from agencies outside of Criminal Justice Social work as not directly relevant to their circumstances. As the research would take time, which would be better spent completing exercises as part of their compulsory supervision. Additionally, reporting the questions could bring up difficult areas which they cannot see the benefit or aim out with the supervision programme. Of note within previous research it is evident the larger samples (N>500) are often recruited when the participation in the study is part of treatment (Elliot, Beech & Mandeville, 2008) or characteristic data is collect as part of the criminal justice and offender management service (Babchishin, Hanson & Hermann, 2011).

Research guidelines from SPS prison service recommend collaborative working during the development of research ideas to promote research in specific areas relevant to the SPS service. Unfortunately, during the research proposal development there was a lack of communication and liaison with the prison service due to the short timeframe for the development of the research project. Access to the prison service population was refused due to required staff involvement in the identification and recruitment of participants. The study recruitment relied heavily on other disciplines as gate keepers to clients. The initial invitation to offender groups was largely through criminal justice social workers and treatment facilitators which was impacted by pressure on staffing resources as an extra task for staff.

Other professionals were gate keepers which required staff to select individuals to approach to participate in the research. Moreover, this could affect the results, as those most passive, or with existing psychological difficulties or less serious crimes may have been approached to participate. Furthermore, the voluntary nature of the study may be less representative of the population. Quayle et al. (2005) proposed that offenders who are avoidant may not engage generally. This study did not access official records, to ensure anonymity for offenders and increase participation, however, resulted in offences not being collaborated. An internet survey recruitment tool may improve recruitment of participants in the area of internet offenders. However, post-conviction ISCOs do not have access to the internet and the computer is removed from their home.

Further recommendations to assist recruitment and overcome barriers would be increased interagency working involvement, initial liaising with services during the development of research ideas and ideally the principle researcher would be working within the service. Crucially, within this study the recruitment has been impeded by the researcher's limited involvement in daily routines and requirements of the services. Thus resulting in limited knowledge of processes and procedures, and required greater staff input, a resource which was not feasible within the prison service and possibly was a factor Criminal Justice social work. Further research with this population is required to expand upon the results of this explorative research study. As research in the area of ICSO's psychological factors accumulates, it will help clarify characteristics and deficits associated with ICSOs.

Thesis Aims and Objectives

General Aim

To examine characteristic differences between Internet child sex offenders and non-offenders. It is proposed this exploratory study will add to the limited literature in this area and will be clinically significant in the care and treatment of this offender group.

Specific Hypotheses:

1. That *social anxiety* will be a statistically greater in Internet child sex offenders than non-offenders.

2. That *loneliness* will be a statistically greater in Internet child sex offenders than non-offenders

3. That *obsessive compulsive disorder* will be a statistically greater in Internet child sex offenders than non-offenders.

Secondary aim:

There is a necessity to understand a cyberpsychology perspective, as clinical factors, which may influence assessment and treatment of social anxiety and loneliness in ISCOs, therefore the relationship be measured in this study. The secondary aim was to assess if there is a relationship between problematic Internet use and the clinical factors, social anxiety and loneliness.

Chapter III

Research study

Social Anxiety, Loneliness and Obsessive-Compulsive Disorder in Internet Child Sex Offenders.

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Social Anxiety, Loneliness and Obsessive-Compulsive Disorder in Internet Child Sex Offenders.

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Social Anxiety, Loneliness and Obsessive-Compulsive Disorder in Individuals who download Indecent Images of Children.

Abstract

There has been an increase in child pornography crime, including downloading and accessing indecent images of children through the Internet. This crime is a form of sex offending which results in child exploitation but does not include direct contact between the offender and the victim. Research to date considering the clinical needs of Internet child sex offenders (ICSO) is limited. This exploratory, cross sectional study compared individuals who download indecent images of children (n=31) and age-matched non-offenders (n=31) on measures of social anxiety, loneliness and obsessive compulsive disorder (OCD). Mann Whitney U tests indicated that ICSOs are significantly more socially anxious and lonely than non-offenders, however the median of ICSOs does not reach the clinically significant cut off for social anxiety. Correlations suggest online cognitions Dependency is significantly related to social anxiety and loneliness. There was no significant difference in OCD scores between the groups, though the obsessing subscale was significant. Recommendations for further research and clinical implications are discussed.

Keywords: Child pornography offenders; sexual offender; Internet; social anxiety; OCD; loneliness.

Introduction

Access to the Internet has exponentially grown in recent years (World Internet Users & Population stats, 2013); this increase has also been evidenced in the UK (Office of National Statistics, 2013). Expansion of the Internet has been accompanied by an increase in crimes that relate to this technology, such as offences involving access, distribution and making of indecent images of children (IIOC), also described as child pornography. With greater access has come the misuse of online technology and an increase in the prevalence of convictions related to child pornography offences (Middleton, Mandeville-Norden, & Hayes, 2009). Krueger, Kaplan, and First (2009) highlight that the Internet has become 'a vehicle for facilitating sexual crimes against children and adolescents' (p.p.623). In the USA, the number of arrests for online sexual offending, has tripled from 2001 to 2009, and they are set to continue to increase with implications for law enforcement and prisons (Seto, 2013). In the UK, the Child Exploitation and Online Protection Centre (CEOP), estimates that during 2012 there were approximately 50,000 individuals implicated in downloading and sharing IIOC (CEOP Threat Assessment of Child Sexual Exploitation & Abuse, 2013). CEOP works in collaboration with Internet providers to block and signpost those who access these illegal images towards services for treatment.

There is a growing body of research investigating the similarities and differences between Internet child sex offenders (ICSO) and the larger group of non-technology mediated offenders. The development of a conceptual understanding has focused mainly on potential risk of future contact offending. The frameworks for understanding ICSOs have drawn from existing research with contact child sex offenders (CCSO) sexual

offenders of crimes that are not mediated by technology and as such there has been little research assessing the clinical needs of ICSOs.

Clinical models for general offenders e.g. Risk-Need-Responsivity (RNR; Andrews, Bonta & Hoge, 1990; Bonta & Andrews, 2007) and the Good Lives Model (GLM; Ward, 2002) for sex offenders are based on the principles of addressing offenders' deficits, as these are considered the driving force for offending. Specific sex offending theories and models (Finkelhor, 1984; Hudson & Ward, 2000; Siegert & Ward, 2002 and Ward & Beech, 2006) have all identified social deficits and emotional dysregulation as plausible factors leading to offending in contact child sex offenders. Elliott and Beech (2009) link knowledge of ICSOs and current theories of child sexual abuse, yet when applying sex offender theories to ICSOs there is a risk of not capturing offence-related qualities, particularly in relation to problematic Internet use.

Ward and Siegert's 'Pathways' model (2002), proposes there are four distinct routes to sexual offending against a child (i.e. intimacy and social skills deficits; antisocial cognitions; distorted sexual scripts; emotional dysregulation). Henry, Mandeville-Norden, Hayes and Egan (2010) suggested that half their sample of ICSOs could be assigned to intimacy deficits or emotional dsyregulation pathways in Ward and Siegert's 'Pathways' model (2002), though half the sample did not fit any pathway. Middleton, Elliot, Mandlevelle-Norden and Hayes (2009) recommend that assessment and treatment of ICSO should be tailored to meet their needs. Interestingly, Quayle and Taylor (2003) propose an etiological model of Problematic Internet use in ICSOs; suggesting socio-affective deficits and deviant sexual cognitions predispose individuals

to use the Internet to manage interpersonal and emotional problems. Clearly more research is needed to understand this population and the best way to address their needs.

Typologies of Internet offenders

Sexual crimes against children on the Internet are termed 'Internet offending': accessing, downloading or distributing, production of child pornography or "grooming" of children via the Internet in order to commit contact offences. Debate has focused on whether viewing indecent images of children is linked to contact sex offences against a child (Endrass et al., 2009). The media strongly portray this link, yet available evidence suggests the majority will not commit a contact sex offence (Glasgow, 2010). ICSO recidivism follow-up studies report official records, which indicate that within a Canadian sample only 4% of ICSO were charged with contact sexual offences and 2% had historical (previously undetected) contact offences (Eke, Seto & Williams, 2012). Meta-analysis evidence suggest 12% of offenders convicted of downloading child pornography have an official record for contact offences, though in self-report studies this ranged from 11 - 55% reported previous undetected contact offences (Seto, Hanson & Babchishin, 2011). Within this meta-analysis, the ICSOs in different studies were not defined or recruited as 'downloading only' ICSOs; therefore they should be considered and interpreted as a mixed offenders group.

Typologies have been developed to better understand the interactions, motivation and nature of Internet sex offending (Krone, 2004; Lanning, 2001; Sullivan & Beech, 2006). However, there is overlap between ICSO categories (Beech, Elliott, Birgden & Findlater, 2008) and with changes in technology, these typologies can quickly become out of date (Aiken, Moran & Berry, 2011). Aslan (2011) reports that

ICSO are a heterogeneous population and one of the main challenges encountered by researchers, clinicians and law enforcement, is allocating ICSOs to categories. Within the UK, Quayle and Taylor's (2003) COPINE typology is most extensively used to categorise child pornography images, and forms the basis of the Sentencing Advisory Panel (SAP) guidelines, which are in the process of being revised. Merdian, Curtis, Thakker, Wilson and Boer (2013) suggest there are broadly two distinct forms of ICSOs: contact driven, those who use the internet to facilitate contact offences and fantasy driven (downloaders and traders of images). This study seeks to explore this ICSO group; those convicted of downloading indecent images of children.

Clinical characteristics

There is little research examining the psychosocial vulnerabilities of ICSOs that could inform both assessment and treatment. Most studies conducted to date have investigated demographic and risk features of ICSOs, without a comparison group, however a few studies compare with CCSOs (Babchishin, Hanson & Herman, 2011). Despite the growing conviction rate, little is known about ICSO characteristics and needs, there is a lack of evidence on which to base assessments and treatment of functional psychological processes.

Socio-affective deficits

Bates and Metcalf (2007) suggest that ICSOs have greater difficulties with emotional deficits (e.g. loneliness) than CCSOs. Webb Craissati and Keen (2007) support this evidence, whereas Neutze et al. (2011) suggest there is no difference on emotional deficits and the groups only differ on static demographic factors (e.g. age, employment and education). One explanation for this discrepancy in research findings may be

explained by sampling issues, with one sample being exempt from prosecution if they agreed to complete treatment (Neutze et al., 2011) and the other groups from offender populations (Bates & Metcalf, 2007; Webb et al., 2007). The offender groups may be higher risk offenders, social stigma of being prosecuted or incarnation effects which meant these groups had higher emotional deficits (Bates & Metcalf, 2007; Webb et al., 2007). Treatment of ICSOs has addressed factors such as emotion self-regulation, intimacy deficits and social skills (Hayes, Archer, & Middleton, 2006). Within the UK, the accredited Internet related sex offending treatment programme (iSOTP) shows evidence of improvements in socio-affective deficits (Middelton, Mandeville-Norden & Hayes, 2009). Graf, Weisert and Dittman (2006) specifically suggest work on loneliness and boredom. However, research is inconclusive as to whether these underlying needs actually exist or are appropriate targets for intervention.

Loneliness

Loneliness is defined as 'a distressing feeling that accompanies the perception that one's social needs are not being met by the quantity or especially the quality of one's social relationships' (Hawkley & Cacioppo, 2010, p.p. 218). There is a significant amount of research supporting the role of loneliness in contact sexual offending (Marshall, 2010). Loneliness is an important factor when considering the vulnerability of the offender. Bumby and Hansen (1997) suggest loneliness may assist understanding of development and maintenance of sexually deviant cognitions and behaviours. Conflicting evidence suggests ICSOs have significantly greater emotional loneliness than CCSO (Marshall, O'Brien, Marshall, Booth & Davis, 2012); whereas Elliot and Beech's (2012) study with a larger sample size found no difference in emotional loneliness. These studies utilized the Revised UCLA loneliness scale (Russell, 1980);

this revised version contains all positively worded (non-lonely) items. A difficulty emerged with the wording of items and double negatives, which impacted on the reliability of the measure. This study will use the UCLA loneliness scale version 3 (Russell, 1996) which simplified wording of the items and the response format, thus eliminates possible comprehension bias (Russell, 1996).

Obsessive-Compulsiveness

Quayle and Taylor (2002) found that within ICSOs, the collecting and categorising of images appeared to be reinforcing and rewarding. Confirmatory to this observation, ICSOs were found to have greater obsessive and compulsive behaviours than CCSOs (Rooney, 2003). Egan, Kavanagh, and Blair (2005) show that obsessional predispositions are crucial underlying influences on the behaviour of sex offenders measured by Maudsley Obsessive-Compulsive Inventory (MOCI; Hodgson & Rachman, 1977) measuring: checking, cleaning, slowness and doubting. However, only half the sample provided offence details and this was a mixture of offence types, contact and Internet offences. Marshall et al.'s (2012) results show a significant difference between ICSOs and CCSOs on OCD symptoms (checking, washing, obsessing, neutralizing, hoarding and ordering) measured by Obsessive Compulsive Inventory-Revised (OCI-R; Foa et al., 2001). Quayle, Vaughn and Taylor (2006) suggest Internet sex offenders may have OCD features. Surprisingly, given the compulsive nature of problematic Internet use, obsessive-compulsive disorder among ICSOs has not been extensively addressed in research studies. The current study will further explore the possible presence of OCD symptoms in ICSOs compared to non-offenders.

Social Anxiety

Individuals with social anxiety disorder; fear and avoid the scrutiny of others due to a fear of negative evaluation, social interaction and attracting attention. Marshall et al.'s (2012) findings with a North American incarcerated sample indicated that ICSOs mean reached clinical cut-off range for social anxiety disorder (SAD), however there was no significant difference between scores of ICSOs and CCSOs. It is speculated this may be due to the sensitivity of the social anxiety scale, the Social Phobia Inventory (SPIN; Conners et al., 2000), which measured three dimensions, avoidance, fear and physiological arousal, with the third dimension especially focused on bodily control. The sensitivity of the scale may not be adequate or the comparison group not appropriate. Armstrong and Mellor (2013) found ICSOs to be significantly greater than non-offenders on social anxiety with the Social Distress and Avoidance Scale (SADS; Watson & Friend, 1969) but reported no significant differences between ICSOs and CCSO, or non-offenders and CCSO. This suggests that this difference may only exist between ICSOs and non-offenders. The current study will assess social anxiety via the Social Interaction Phobia Scale (SIPS), which measures behavioural and affective symptoms, without a focus on cognitions or physiological bodily reactions.

Problematic Internet use

Individuals presenting with 'internet addiction' have difficulties with social isolation, intimacy deficits, loneliness, depression and anxiety (Burgess, Mahoney, Visk & Morgenbesser, 2008). Social anxiety significantly predicted problematic Internet use and was related to perceptions, when communicating online, of less risk of negative evaluation and a greater sense of control (Lee & Stapinski, 2012). Lee, Li, Lamande and Schuler (2013) report ICSOs are low on antisocial behaviour and high on Internet

preoccupation. Ray, Kimonis and Seto (2013) comparing ICSOs and pornography consumers found no differences on emotional and intimacy deficits, i.e. loneliness and attachment styles, suggesting these traits are possibly characteristic of general problematic Internet use. There is a necessity to understand a cyberpsychology perspective, as clinical factors, which may influence assessment and treatment of social anxiety and loneliness in ISCOs, therefore the relationship be measured in this study.

Purpose of study

This non-experimental, exploratory study aims to examine whether measures of social anxiety, obsessive-compulsive disorder and loneliness can discriminate between ICSOs and non-offenders. Research has shown ICSOs are better educated, younger and more intelligent than other sex offender groups (Babchishin, Hanson, & Herman, 2011). ICSOs have interpersonal deficits which evidence suggests as a group, may have clinical and management challenges which are different from incarcerated populations (Magaletta, Faust, Bickart & McLearen, 2012). In order to expand upon Marshall et al.'s (2012) study of incarcerated ICSOs, this study will focus on social anxiety, obsessive-compulsive disorder and loneliness with community ICSOs compared with non-offenders. With an increasing number of ICSOs receiving community disposals or being encouraged to seek support from voluntary or mental health services, there is a need for greater understanding of clinical issues in comparison to a non-offender general population. It was hypothesised that ICSOs will score higher on social anxiety, loneliness and obsessive- compulsive disorder than non-offenders. A secondary aim was to assess if there is a relationship between problematic Internet use and the clinical factors, social anxiety and loneliness.

Method

Power calculation

To provide guidance on the optimum sample size prospective power analyses were conducted according to G*Power version 3 (Faul, Erdfelder, Lang & Buchner, 2007). To achieve a medium effect size (f=.25) for a difference in scores between two groups (ICSOs and non-offenders) with an alpha error probability of .05 and a power value of .8 (beta error), requires a sample size of at least 30 per group.

Participants

Thirty-five male ICSOs based in the community were recruited. Eighteen were recruited from 'Stop It Now!', a non-government organisation managed by the Lucy Faithfull Foundation. Of these, 11 were currently in the Inform Plus treatment group, a psychoeducation and support group with Stop It Now! and 7 had previously completed this treatment. All Inform Plus group members were post-arrest for downloading and accessing indecent images, awaiting conviction and had voluntarily accessed Stop It Now! services for support. Seventeen ICSOs were recruited from Criminal Justice Social Work (CJSW) areas in Southeast Scotland. These ICSOs were post-conviction and legally required to be under the supervision of Criminal Justice Social Workers. The inclusion criteria were: men arrested for Internet child pornography offence (without contact sexual offence), over 18 years of age, English as a first language or fluent in English, without a diagnosis of a major mental illness (e.g. Schizophrenia) or a learning disability. Four ICSOs were excluded because of prior contact offences, resulting in a sample of 31 individuals.

All ICSOs reported no previous offences. Ninety-seven per cent of the ICSO

participants reported details of the sexual images of children in their possession, with 60% reported predominantly images of males, 26.7% predominantly females and 13.3% collected images of both genders. In relation to the approximate age of the children in the images 93.5% responded, with 41.4% of ICSOs reported the images were of under 13year olds, for 24.1% were14 to 18 year olds, and 34.5% of ICSOs collected images of children from all age groups under 18 years old. Eighty-one per cent of ICSOs were undertaking group treatment and 19% had completed group treatment, with 11.5% reporting seeking additional private therapy.

One hundred and fifty-four non-offender male subjects were recruited via 'snowball' email sampling using an online Internet survey (Bristol Online Survey, BOS). Eighteen individuals did not meet the inclusion criteria (male respondents over 18 years with no prior convictions, English as a first language or fluent in English, without a diagnosis of a major mental illness or a learning disability). From the remaining 136 participants, thirty-one non-offenders were matched to ICSO primarily by age, and secondary match 'having a child'.

The demographic characteristics of the samples were self-reported and presented in Table 3.1. There was no significant difference in age between the two groups, $t(60)=.075$, $p>.05$. The ethnicity of both samples was 96.8% Caucasian (English, Welsh, Scottish or Irish), with no significant differences between groups, Fisher exact test χ^2, $p=.75$. The samples did not differ on frequency of having children, Fisher exact test χ^2, $p=.213$. Highest educational attainment of ICSOs was Standard grades/GCSE (32.9%), Highers/A Level (29%) and degree (29%). In comparison the non-offender sample in this study was Highers/A level (16.1%), degree (48.4%) and postgraduate degree

(25.8%), Chi-squared test χ^2 showed a significant difference between the groups $p<.05$ indicating the non-offending group are better educated.

Table 3.1: Demographic information for Internet Offenders (ICSOs) and Non-offenders.

	Internet offender group (ICSO)	Non-offending group
Age	40.52 (mean) 13.78 (StDev)	40.77 (mean) 13.46 (StDev)
Ethnicity		
British white	96.8%	96.8%
Other	3.2%	3.2%
Parent	9(30%)	13 (42%)
Education level		
No qualifications	1(3.2%)	0
Standard grades/GCSE	10 (32.3%)	3(9.7%)
Highers/ 'A'Level	9(29%)	5 (16.1%)
Degree	9(29%)	15 (48.4%)
Post-grad	2(6.5%)	8 (25.8%)
Doctorate	0	0

Ethical considerations

Ethical approval for the study was obtained from the School of Health in Social Science, University of Edinburgh. Additionally, in relation to the offender sample, the Research Management Boards of Criminal Justice Social Work district teams (geographical areas) granted approval to access participants.

Procedure

Recruitment of offenders from the different services was carried out from March 2013 until October 2013. The principal researcher liaised with service managers at CJSW and Stop It Now!, CJSW supervising officers and group facilitators via email and attending team meetings to disseminate information about the current study. Study information sheets for staff and clients were provided. Individuals were selected by CJSW

supervising officers and Stop It Now! group facilitators according to the inclusion/exclusion criteria. Information sheets clearly indicated that the study was voluntary, had no impact on the services or treatment individuals received, the information provided was confidential, anonymous and participants could withdraw from the study until the point of submitting the questionnaire responses. Potential participants were provided with an information sheet, consent form and questionnaire pack (completion time was 10-15minutes), which was returned to the researcher in a sealed envelope. Drop-in sessions with the researcher were offered to participants to discuss the study further or provide support completing the questionnaires. No participants met with the researcher for assistance.

Non-offending, male adult participants were recruited by email via a chain sampling or 'snowballing' method (Heckathorn, 1997). This approach is low cost, has external validity and a fast method of recruitment (Reips, 2002). The email titled 'Request for men to participate in online research' contained a link to the online survey (Bristol Online Survey). Individuals who responded by clicking on the provided link were directed to the study and provided with detailed information. They were informed that all responses would be anonymous and individuals were free to withdraw up until the point of submitting their responses. Individuals completed the inclusion criteria questions. Eligible participants were instructed that continuing with the survey indicated they had read the information and voluntarily agreed to participate in the study. Individuals were asked to forward the study email to acquaintances, to help recruit further participants.

Measures

Social Interaction Phobia Scale (SIPS) (Carleton, Collimore, Asmundson, McCabe, Rowa, & Antony, 2009).

This is a fourteen item self-report measure of fear associated with social interaction and performance situations and evaluate dimensional symptoms specific to Social Anxiety Disorder (SAD). It was developed by exploratory and confirmatory factor analysis of the Social Interaction Anxiety Scale (SIAS) and Social Phobia Scale (SPS; Mattick & Clarke, 1998), resulting in a focus on behavioural and emotional symptoms of social anxiety. The scale has three subscales measuring symptoms of SAD: fear of attracting attention, social interaction anxiety and fear of overt evaluation. Responses are made on five-point Likert scales, ranging from 0 (not at all characteristic or true of me) to 4 (extremely characteristic or true of me). The SIPS total score has the required sensitivity and specificity for discriminating clinical and non-clinical samples, a total score of 30 or higher is indicative of SAD (Carleton et al., 2009). Internal consistency in undergraduate and clinical samples is high (α=.92) with evidence of factorial stability, convergent validity and discriminant validity (Carleton et al., 2009). Research has replicated the psychometric properties of the SIPS in a large and independent sample (Reilly, Carleton & Weeks, 2011). In the current study, Cronbach's alpha was .95 for the SIPS total, .93 for the fear of social interaction scale, .93 for the fear of overt evaluation and for the fear of attracting attention scale is .94.

Obsessive-Compulsive Inventory-Revised (OCI-R) (Foa et al., 2002)

This is a self-report eighteen-item measure for evaluating distress associated with obsessions and compulsions. The scale is rated on a 5-point Likert scale, ranging from 0 (not at all) to 4 (extremely). There are six subscales, each with three items,

corresponding with the symptom dimensions. The respective item scores are added to obtain the total and subscale scores. The OCI-R is highly correlated with the longer version OCI (42 items; Foa et al., 1998) and in both clinical and non-clinical samples, total score and subscales have good to excellent, test–retest reliability, convergent validity and internal consistency (Foa et al., 2002). Abramowitz and Deacon (2006) replicated results and recommended the OCI-R as an empirically validated measure. In this study, the Cronbach's alpha was .88 for the OCI-R total, .80 for the checking scale, .62 for hoarding scale, .60 for Neutralizing scale, .86 for Obsessing scale, .91 for ordering scale and .69 for the washing scale.

UCLA Loneliness Scale: Version 3 (Russell, 1996)

This is a self-report twenty-item scale, using a 4-point Likert scale (1=never to 4=always) designed to identify feelings of loneliness, in particular in relation their experience of adult relationships. It consists of nine positively worded (non-lonely) items and eleven negatively worded (lonely) items to evaluate general, present day experiences related to emotional and social dimensions of loneliness. The scale is used as a one-dimensional scale, there are no specific cut off points for the scale. The scale is highly reliable in terms of test-retest reliability (r=.73) and internal consistency (α=.89), with significant correlations with other loneliness measures, showing convergent and construct validity (Russell, 1996). In the current study, the Cronbach's alpha was .94.

Social Desirability Scale (SDS), (Crowne & Marlowe, 1960).

This scale was included as sex offenders' completion of self-report scales is susceptible to social desirability (Tan & Grace, 2008). This is a self-report scale that consists of 33 true or false forced choice items. It evaluates the tendency for individuals to respond in

a socially desirable manner, to provide overly positive self-descriptions (Crowne-Marlowe, 1960). Total scores range from 0 (low) to 33 (high social desirability). The scale has two factors: Denial (propensity to deny socially undesirable behaviours) and Attribution (tendency to endorse socially approved behaviours). Andrews and Meyer (2003) produced forensic norms for the scale, indicating offenders' scores are generally higher (mean=19.4) compared to a non-forensic population. Internal consistency (α=.88) and test-retest reliability (r=.89) (Crowne & Marlowe, 1960). In this study, Cronbach's alpha was .81 for the total score.

Online Cognition Scale (OCS): short version (Jia & Jia, 2009)

This is a measure of problematic internet use. The scale was developed from confirmatory factor analysis of the 36 item, four-factor OCS (Davis, 2001). This is a self-report, ten item scale which consists of two factors (seven items on Distraction and three items on Dependency). The items are rated on a seven-point Likert scale, from 1 (strongly disagree) to 7 (strongly agree). The items are summed to provide a total and subscale scores. It is efficient and exhibits satisfactory factorial validity, the Cronbach's alpha for the refined measure was .91, for the dependency scale is .84 and for the distraction scale is .73 (Jai & Jai, 2009). In the current study, Cronbach's alpha was .91 for the OCS total, .89 for the dependency scale and .91 for the distraction scale.

Demographic information

All participants were asked to provide the following demographic information: age, whether they have children, ethnic group, level of education and current or prior convictions. Further offence related information was obtained from ICSOs: current offence, age and gender of children collected in child pornography images, prior

conviction (contact/non-contact) and treatment.

Data analysis

Data were analysed using SPSS (version 19.0). Mann Whitney non-parametric analysis were performed to assess differences between groups across the scales. Additionally, the relationships between the problematic internet use and independent variable measures were be tested by correlational analyses. Of the 62 participants, partial missing data were managed by correcting by pro-rating individual means for subscale scores. Where data was missing for a full scale the participant was excluded from the analysis (ICSO sample: OCI-R (1) & OCS (3)). Sample size for analysis varied from 59-62 because of missing data for scales, this was accounted for in calculation of approximate effect size.

Tests for normality (Kolmogorov-Smirnov) indicated that the SIPS, OCI-R and OCS (distractability and dependency) scores were not normally distributed. Tests for homogeneity of variance (Levene's test) were significant on SIPS and OCS (distractability and dependency), indicating the variance was significantly different between the two groups. Therefore, as assumptions for parametric tests were not met across all measures, non-parametric statistics were used to compare the groups and test relationships. There was no significant difference in Social Desirability on the Marlowe-Crowne Scale between ICSOs (Mdn=14.88, IQR=9.18) and non-offenders (Mdn=15.59, IQR=9.24), U=431, p>.05, r=.09, therefore no adjustment by social desirability was required.

Results

Differences between ICSOs and non-offenders

Medians for the two groups on OCD, loneliness and social anxiety are shown in Table 3.2. Mann Whitney U tests showed no significant difference between the groups for OCD scores U=357, p>.05; r=.2. For loneliness (UCLA), there was a significant difference between the groups, indicating that ICSOs (*Mdn=51, IQR* = 46-57) experienced more loneliness than non-offenders (*Mdn*=39, *IQR=33-43)*, U=141, p<.000; r=.6. This represents a large effect size. For Social Anxiety (SIPS) a statistically significant difference was found, U=215,p<.001; r=*.5,* whereby ICSOs (*Mdn=14, IQR=7-26*) experienced greater social anxiety than non-offenders (*Mdn=6, IQR=3-9*). The effect size represents a large effect.

Differences on social anxiety subscales between the two groups were further tested by looking at the individual subscales: fear of social interaction, fear of attracting attention and fear of overt evaluation (see Table 3.2). Mann Whitney U tests indicated a significant difference in fear of social interaction, U=265, p<.01; r=.4, fear of attracting attention, u=278, p<.01; r=.4 and fear of overt evaluation, U=275, p<.01; r=.4. For all three subscales, ICSOs scored higher on social anxiety than non-offenders, representing medium to large effect sizes.

Differences on OCD subscales between the two groups were further tested by examining the individual subscales (see Table 3.2). Mann Whitney U tests indicated a significant difference on one of the six subscales i.e. obsessing, U=263, p<.01; r=.4. ICSOs scored higher on obsessing than non-offenders, representing medium to large effect sizes.

Although, there is a statistical significance between the groups, the clinical significance of the results indicate the median of the ICSO group (Mdn=16) does not meet the clinical cut off for social anxiety (score of 30 on the SIPS). The percentage of ICSO group meeting the clinical cut off is 19.4 %; the interquartile range (IQR) indicates 50% of the scores for ICSO group are scoring between 7 and 26, indicating the results are widely spread across a range and no indication data of polarised subgroups. In comparison, the percentage of non-offending group meeting the clinical cut off point is 0.03% for social anxiety; the interquartile range (IQR) indicates the range of 50% of the scores for the non-offending group are between 3 and 9.

Table 3.2: Medians, Interquartile Range, Non-parametric tests (Independent samples Mann-Whitney U test) for ICSOs and Non-offenders.

Measures	Group 1 Internet offenders (n=31) Mdn (IQR)	Group 2 Non-offenders (n=31) Mdn (IQR)	Significance	Effect size (r)
Social Desirability Total (MCS)	14.88 (10.29, 17.76)	15.58 (11.59, 20.82)	p=.491	r = .1
Denial	6 (4.9)	7 (4, 9)	p=.686	r = .05
Attribution	7.88(6.35, 10.58)	9.53 (6.35, 11.64)	p=.405	r = .1
Loneliness *(UCLA)*	51 (46, 57)	39 (33, 43)	p=.000***	r = .6
Social Anxiety Total *(SIPS)*	14 (7, 26)	6 (3, 9)	p=.000***	r = .4
Fear of Social interaction	10 (4, 13)	4 (1, 6)	p=.002**	r = .4
Fear of overt evaluation	4 (1, 9)	2 (0, 3)	p=.003**	r = .4
Fear of attracting attention	2 (0, 6)	0 (0, 1)	p= .002**	r = .4
OCD total *(OCI-R)*	12 (4, 20.5)	8 (3, 13)	p= .12	r = .2
Obsessing	3 (0, 5.25)	0(0, 2)	p=.006**	r = .4
Washing	0 (0, 1)	0(0, 2)	p=.494	r = .1
Hoarding	3 (1.75, 4.25)	3(1, 4)	p=.215	r = .2
Checking	1 (0, 4)	2(0, 3)	p=.669	r = .1
Neutralizing	0 (0, 1)	0(0, 1)	p=.481	r = .1
Ordering	3 (0, 5)	1(0, 2)	p=.114	r = .2
Online Cognitions *(OCS)*				
Distractability	12 (6, 15)	6 (3, 13)	p=.045*	r = .3
Dependency	25(14.5,31.75)	15 (8, 21)	p=.002**	r = .4

*significant at p<.05, ** significant at p<.01, *** significant at p<.001.

The secondary aim, if there is a relationship between problematic Internet use and the clinical factors, social anxiety and loneliness, firstly it was assessed if problematic internet use, Dependency and Distractibility on online cognition scales differed between the groups, ICSOs and non-offenders. For Dependency this was found to be statistically

significant U=231, p<.01; r=.4. ICSO score significantly greater than non-offenders. This represents an approximate medium effect size. For Distractibility this test was found to be statistically significant U=303, p<.05; r=.3. This represents an approximate medium effect size. ICSO score significantly greater than non-offenders.

Secondly, in order to test if Dependency and Distractibility on the OCS were related to social anxiety and loneliness, bivariate Kendall's Tau correlation were conducted (See Table 3.3). The relationships between Distractibility and loneliness (r=.11, p>.05), and Distractibility and social anxiety (r=.16, p>.05) were non-significant. The results showed significant positive correlations between Dependency and loneliness (r=.4, p<.001), and Dependency and social anxiety (r=.32, p<.001).

Table 3.3: Correlations (Kendall's tau) across the measures.

Measures	**Dependency (OCS)**	**Distractibility (OCS)**	**OCD (OCI-R)**	**Social Anxiety (SIPS)**	**Loneliness (UCLA)**
Loneliness *(UCLA)*	r=.4* p<.001	r=.11 p>.05	r=.29* p<.01	r=.52* p<.01	-
Social Anxiety *(SIPS)*	r=.32* p<.001	r=.16 p>.05	.28* p<.01	-	
OCD *(OCI-R)*	r=.25 p<.01	r=.13 p<.01	-		
Distractibility *(OCS)*	.42* p<.01	-			
Dependency *(OCS)*	-				

**. Correlation is significant at the 0.01 level (2-tailed).

Discussion

The aim of this study was to explore differences between ICSOs and non-offenders on social anxiety, loneliness and obsessive-compulsive disorder. The results indicated community males convicted of accessing indecent images of children, with no prior convictions of contact offences were significantly different from age-matched non-offending males on measures of loneliness and social anxiety, where ICSOs are more lonely and social anxious than non-offenders. These results are consistent with previous research on social anxiety (Armstrong & Mellor, 2013) and loneliness (Babchishin, Hanson, & Hermann, 2011; Bates & Metcalf, 2007).

Although, there is a statistical significance between the groups, the clinical significance of the results indicate the median of the ICSO group does not meet the clinical cut off for social anxiety (score of 30 on the SIPS). One fifth of the ICSO group meet the clinical cut off and the interquartile range indicated the results are widely spread across a range and no indication data of polarised subgroups. In comparison, the percentage of non-offending group meeting the clinical cut off point is 0.03% for social anxiety; the interquartile range indicates the majority score low on social anxiety. It is hypothesised that ICSOs may consist of subgroups; similar to Henry et al. (2010) study were half the sample could be assigned to intimacy deficits or emotional dysregulation pathway in the Ward and Siegert's pathway model (2002), therefore warrants further investigation into factors related to the existence of subgroups within ICSO.

With OCD there were no significant differences on the total score. Yet, on further exploration, there was a significant difference on the obsessing subscale, which may suggest ICSOs have more obsessing symptoms, similar to previous findings related

to OCD (Marshall et al., 2012) or obsessive behaviours (Egan et al., 2005). This may explain why some ICSOs collect thousands of images. Nevertheless, this must be interpreted with caution, as this subscale consisted of only three items and further research is warranted. Additionally, there was a significant association between Dependency and social anxiety, and Dependency and loneliness, suggesting problematic internet use may play and important role.

These findings on emotional loneliness and social anxiety are consistent with other research; these factors may reduce the offenders' estimation of the efficiency of developing and maintaining age-appropriate relationships (Armstrong & Mellor, 2013; Elliott & Beech 2008). However, due to the study design, it is impossible to make inferences about directional causality from these data. Deficits in loneliness and social anxiety among ICSOs, may lead to viewing child pornography to have their needs met via the internet due to lowered social risk with no face to face contact, or may have developed as a consequence, post arrest for downloading child pornography.

Implications for treatment

Psychological understanding of this group of offenders is vital to inform treatment. As Laulik, Allam, and Sheridan (2007) point out, many of the existing studies of Internet offenders have tended to focus on either the behavioural characteristics of the offenders, or on the development of motivational typologies, rather than on the psychological functioning of this population. As a result, research has offered limited evidence that might inform assessment and treatment. Taylor and Quayle (2002) report that professionals often feel ill equipped to understand and manage ICSOs. Consistent with other research, ICSOs may require specifically designed treatment programs and

support (Armstrong & Mellor, 2013; Hayes, Archer & Middleton, 2006). This study highlights that for some ICSOs social anxiety and loneliness are higher than within a non-offending population, and therefore may impact on ability to seek treatment or engage meaningfully in group based therapeutic work. Treatment needs to take into consideration social anxiety and loneliness deficits, contemplating interventions such as CBT for anxiety, social skills training and befriending. Thus increasing social opportunities and self-esteem, areas that may be ignored if focus is solely on criminogenic needs.

Marshall and Barbaree (1990) argue that 'one size does not fit all' for sex offenders, and that it is important to consider psychological factors and mental health issues within ICSOs. Importantly, differential diagnosis will be important, as high scores on these measures may be due to social anxiety, avoidant personality disorder, autism spectrum disorder, compulsive or obsessive personality traits or 'internet addiction'. These require further research as the differentiation prior to intervention will be therapeutically advantageous. The integration of social services and health care (Public Bodies (Joint Working) (Scotland) Bill; 2013) will result in greater inter-agency working to provide treatment for offenders. Additionally, the support from voluntary services to provide de-stigmatising services to this group of offenders is vital to increase help seeking and provide psycho-education.

The focus of this study was not on risk, and this is not to disregard the potential of contact offending; however there was no measure of recidivism in the study and it will not to contribute to the debate on the risk of internet 'only' offenders escalating to contact offences. However importantly emotional loneliness has emerged as a risk

factor for differentiating recidivism in contact offenders (Bates et al., 2004). Child pornography consumption may be a risk factor for contact offending, however it is not a definite indicator, therefore must be considered in combination with other risk factors (Eke & Seto, 2012). This may be an important risk factor in ICSOs, which requires treatment to reduce risk.

Limitations

These findings must be considered in the context of several limitations. Firstly, selection bias, as each sample was recruited and completed measures differently. Of the ICSO sample, individuals sought treatment or individuals were under compulsory supervision, therefore may not be representative of the wider ICSO population. Notably, as strengths, this community ICSO sample's environmental factors are a closer match to a non-offending sample. Additionally, given the ICSOs are difficult to detect (Taylor & Quayle, 2003) this convenience sample is essential for exploratory studies and to build conceptual understanding of this group of offenders.

Secondly, detection bias may have been introduced, as although measures used showed validity and reliability, and showed high internal reliability, most were not validated with a forensic population, apart from social desirability scale. There are limited clinical measures that are validated with ICSOs (Sullivan & Beech, 2002). There are recognised problems with accuracy of self-report, due to social desirability, retrospective bias or dynamics of psycho-affective deficit. Therefore, outcomes may change post-conviction due to the experience of arrest and criminal justice involvement i.e. may be influenced by consequences of shame and social judgement of socially

unacceptable sexual interest (Marshall, Marshall, Serran & O'Brien, 2009). Therefore, the data presented here indicate present functioning, rather than pre-arrest functioning.

An important detection bias limitation is the social anxiety measure (SIPS) utilised in the study, as it measures only two components of the Clark and Wells (1995) model of social anxiety and does not measure the third component of physiological response of social anxiety. A review of social anxiety measures indicates no self-report tools measure physiological component, except the Social Phobia Inventory (SPIN) (Connor et al., 2000). However, there are a number of items within this scale which may skew results within offender populations regarding authority, e.g. participants were asked to rate distress in relation to 'fear of people in authority' and 'fear of talking to someone in authority'. Additionally, SPIN requests participants to acknowledge distress from physical symptoms sweating, palpitations and trembling or shaking. From the author's clinical experience, offenders are often reluctant to disclose information that may be viewed as vulnerabilities instead presenting a macho persona. Within research, CCSOs have been shown to have difficulties recognising the emotional states of adults as well as children (Hudson *et al.*, 1993). The Social Interaction and Phobia Scale (SIPS) was selected in the current study as a measure of fear associated with social interaction and performance situations specific to social anxiety (SA), an additional observational measure of physiological response would be important in future research.

As a strength, this study measured social desirability, though interestingly, social desirability did not differ between the two groups. The non-offending group scored higher than expected, based on norms for a non-offending population and ICSO's scored similarly to sex offenders (Tan & Grace, 2008) but lower than Meyer's (2003)

forensic population. The present study results may be influenced by the different methods of questionnaire administration (Paper & Internet). As previous research has indicated social desirability increases in online questionnaires, due to increased anonymity (Booth-Kewley, Larson & Miyoshi, 2007), which is contrary to expectations. Yet interestingly, Gannon (2006) question the validity of social desirability scales to assess the accuracy of truthful responding, suggesting it reflects trait agreeableness (Kurtz, Tarquini & Iobst, 2008).

Thirdly, due to the observational design of the study confounders may influence the outcomes e.g. previous incarceration, socio-economic status or substance misuse. Also, all ICSOs in the sample engaged in treatment, which may influence their psychological understanding of their offending and improve coping skills. It was not possible to measure all possible confounders in this exploratory study, therefore included a limited number of questionnaires to reduce administration time and increase participation.

Fourthly, the study controlled groups firstly by age matched design and secondary match by 'being a parent'. It was not possible to measure all possible confounders in this exploratory study, and included a limited number of questionnaires to reduce administration time and increase participation. A possible limitation is non-matching of groups on pornography viewing. However, as ICSO do not have access to the internet or computers post arrest, a measurement of pornography viewing would be retrospective and less accurate. Additionally, Ray, Kimonis & Seto (2013) compared ISCOs and pornography consumers found no differences on emotional and intimacy deficits, ie loneliness and attachment styles, suggesting these traits are possibly that

these traits are characteristic of general problematic Internet use. With no causal direction, it could be that for some problematic Internet use more generally, may be associated with emotion focused coping strategies (Quayle, Vaughan & Taylor, 2006). Due to the cross-sectional design of this study, multiple confounders may influence the outcomes and limits causal inferences that can be made about the significant differences. Several statistical comparisons were conducted without adjusting the p value, which may lead to type 1 errors

Future research

Firstly, limitations within the current study would benefit from a larger sample size, matched on socio-ecomonic status and education attainment, and additional control groups, such as CCSO and nonsexual violent offenders. Secondly, clarity is required on a number of constructs important to this area, such as definitional clarity on problematic Internet use and role of social desirability, as a trait characteristic or response bias. Thirdly, evidence suggests that some sexual attraction to post pubescent teens is normative among men (Wakefield, 2012), due to the small sample size it was not possible to explore comparisons regarding age preference of images pre-pubescent and post pubescent ICSOs subgroups. Finally, self-report measures of loneliness and social anxiety could be replaced with more direct measures such as the Implicit Relational Assessment Procedure (IRAP), to access implicit thoughts and thus overcome the social desirability debate (Dawson, Barnes-Holmes, Gresswell, Hart & Gore, 2011). As research in the area of ICSO's psychological factors accumulates, it will help clarify characteristics and deficits associated with ICSO's.

Conclusion

In conclusion, the results of the exploratory study suggest ICSOs are significant different from non-offenders on social anxiety and loneliness. ICSOs have some psychological characteristics that differentiate them from non-offenders. They have greater social anxiety and greater levels of loneliness than non-offenders, requiring specifically designed treatment programs to address such factors. Further investigation into whether such offenders are distinguishable from other sexual offenders is necessary in order to clarify different treatment needs and the prevention of further offending.

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LIST OF APPENDICES

APPENDIX A1
SYSTEMATIC REVIEW

INSTRUCTIONS FOR AUTHORS

Aggression and Violent Behavior

Aggression and Violent Behavior, A Review Journal is a multidisciplinary journal that publishes substantive and integrative reviews, as well as summary reports of innovative ongoing clinical research programs on a wide range of topics germane to the field of aggression and violent behavior. Papers encompass a large variety of issues, populations, and domains, including homicide (serial, spree, and mass murder: sexual homicide), sexual deviance and assault (rape, serial rape, child molestation, paraphilias), child and youth violence (firesetting, gang violence, juvenile sexual offending), family violence (child physical and sexual abuse, child neglect, incest, spouse and elder abuse), genetic predispositions, and the physiological basis of aggression.

Manuscripts that articulate disparate orientations will be welcomed, given that this journal will be cross-disciplinary and cross-theoretical. Indeed, papers will emanate from numerous disciplines, psychology, psychiatry, criminology, criminal justice, law, sociology, anthropology, genetics, social work, ethology, and physiology.

Papers describing the study of aggression in normal, criminal, and psychopathological populations are acceptable. Reviews of analog investigations of aggression and animal models will be considered if the contribution is likely to lead to significant movement in the field. The emphasis, however, will be on innovativeness of presentation and clarity of thinking.

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State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

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A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.

Results

Results should be clear and concise.

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The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

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If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

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Reference to a chapter in an edited book:

Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). New York: E-Publishing Inc.

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- Full postal address
- Telephone

All necessary files have been uploaded, and contain:

- Keywords
- All figure captions
- All tables (including title, description, footnotes)

Further considerations

- Manuscript has been 'spell-checked' and 'grammar-checked'
- All references mentioned in the Reference list are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Web)
- Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and

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APPENDIX A.2

REASONS FOR EXCLUDED STUDIES

Study	Reason for rejection
Calzada, Brown and Doyle (2011)	Focused on psychiatric symptoms as a predictors of sexual aggression among male college students. However, this study did not include convicted sex offenders.
Gowlyn (1992)	Paraphilias, nonparaphilic sexual addiction and social phobia. However this was a brief review and not specific to sex offenders.
Grant (2005)	Focus of the study was demographic and phenomenonlogical features of exhibitionist males and considering Axis I diagnosis. However, the sample age group was 14-68years.
Hornsveld and Kruyk, (2005)	Focus of personality characteristics and aggression and social competency. However, this study included adolescence 16years to 18years in the sample with adults.
Kafka, and Prentky (1992):	Focus on nonparaphilic sexual addictions and paraphilia in men. However, this study recruited male respondents to a newspaper advertisement. Only 4 of the sample of 30 had previous convictions for sex behaviours and none had current legal charges for sexual misconduct.
Kafka et al (1994):	Focus on Axis I disorder in paraphilia and paraphilia related disorder, however sample is outpatients and none are defined as convicted sex offenders.
Kafka et al. (1998)	Adult paraphilic offenders. Checklist for DSM-III-R disorders. Did not report social anxiety.
Kafka (2010)	Paraphilic offenders checklist for DSM-IV disorders, not reporting social anxiety.
Krueger, Kaplan, and First (2009)	Study reviews comorbidity with Axis I disorders. However, there is no specific reporting of social anxiety.
Ouimette, Shaw, Drozd and Leader (2000)	The focus of this study consistency of reports of rape behaviours among non-incarcerated men. This study did not include men with a conviction of sexual offences.

APPENDIX A.3
SYSTEMATIC REVIEW DATA EXTRACTION FORM

DATA EXTRACTION

Study identification (*title*)		
Author (year/ country):	Journal (volume/pages):	Reviewer (date):
Type of publication: (eg journal article. Conference abstract)	Funding body:	

Main research question/ Aim/objective:
Secondary research question:
General design: (descriptive, correlational, comparative, quasi-experimental, repeated measures, qualitative)
Study inclusion and exclusion criteria:

Paper characteristics/ Domains	Yes/partial/ no	Comments
Background		
Provisions of background information?		
Question/Objectives clearly stated?		
Study originality?		
Relevance to clinical practice?		
Sample definition and selection		
Is the study prospective?		
Are the inclusion/ exclusion criteria clearly stated?		
Recruitment process and blinding described?		

Power analysis conducted to predict required sample size? Sample size adequate?		
Is the sample representative of CCSO?		
Are participant characteristics described?		
Outcomes		
Clearly specified?		
Objective / reliable?		
Relevance of outcomes?		
Confounders? Ethnicity? Age? Substance misuse? SES?		
Number of participants included in analysis		
Number of withdrawals exclusions were lost to follow-up		
Group comparisons: Matched in recruitment or analysis? Allocation to group method?		
Each outcome: - was it reported - definition used - measurement tool		
Outcome data/ results?		
Multiple methods? Relevant?		
Reliability and validity of measures		
Measures used the same across participants?		
Assessors/ participants blinded?		
Setting		
Setting of research – treatment/ non-treatment assessment/experiment		
Analysis		
Data analysis described and appropriate?		
Results effect size?		
Results reliable?		
Interpretation/ implications clinical and research based on results.		
Clarity and structure		
Do results fit with available evidence?		
Statistical techniques used and reporting		
Additional outcomes		

APPENDIX A.4

SYSTEMATIC REVIEW QUALITY ASSESSSMENT TOOL

ethodology Checklist

dy identification *Author:* *Year of publication:*

le:

thod: Circle appropriate

ychometrics / Structured clinical interview tool / clinical interview / behavioural experiment / file information

ideline topic: Sex offenders and Social Anxiety (Axis 1 Disorder)	Reviewer:	Date:

CTION 1: INTERNAL VALIDITY

a well conducted study:		*Does this study do it?*
1	The study addresses an appropriate and clearly focused question.[i]	Yes □ No □ Can't say □
ELECTION OF SUBJECTS		
2	Are the groups of individuals selected to participate in the study likely to be representative of the adult male sex offender population.[ii]	Highly likely □ Somewh at likely □ Not likely □ Can't say □
3	The study indicates how many of the people asked to take part did so, in each of the groups being studied.[iii]	Yes □ No □ Does not apply □
SSESSMENT		
4	The outcomes are clearly defined.[iv]	Yes □ No □ Can't say □ Does not apply □
5	The assessment of outcome is made blind to group status (Independent variable). If the study is retrospective this may not be applicable.[v]	Yes □ No □ Can't say □ Does not apply □
6	Were the study participants aware of the research question?[vi]	Yes □ No □ Can't say □ Does not apply □
7	Where blinding was not possible, there is some recognition that knowledge of group status could have influenced the assessment of outcome.[vii]	Yes □ No □ Can't say □ Does not apply □

The method of assessment of independent variable (group status: sex offender group or control) is reliable.[viii]	Yes □ No □ Can't say □ Does not apply □
Evidence from other sources is used to demonstrate that the method of outcome assessment (measurement of social anxiety) is valid and reliable.[ix]	Yes □ No □ Can't say □ Does not apply□
Social anxiety is assessed more than once.[x]	Yes □ No □ Can't say □ Does not apply □
NFOUNDING	
The main potential confounders are identified and taken into account in the design and analysis.[xi]	Yes □ No □ Can't say □
ATISTICAL ANALYSIS	
Was the study sufficiently powered to detect an effect?[xii]	Yes □ No □
Are analytical methods appropriate for the study design?[xiii]	Yes □ No□
Have confidence intervals been provided?[xiv]	Yes □ No□
CTION 2: OVERALL ASSESSMENT OF THE STUDY	
How well was the study done to minimise the risk of bias or confounding?[xv]	High quality (++) □ Acceptable (+) □ Low Quality (0) □
Taking into account clinical considerations, your evaluation of the methodology used, and the statistical power of the study, what is the degree of association between sex offenders and social anxiety is? [xvi]	
Are the results of this study directly applicable to the sex offender group?	Yes □ No □
Notes. Summarise the authors' conclusions. Add any comments on your own assessment of the study, and the extent to which it answers your question and mention any areas of uncertainty raised above.	

[i] Unless a clear and well defined question is specified in the report of the review, it will be difficult to assess how well it has met its objectives or how relevant it is to the question you are trying to answer on the basis of the conclusions.

[ii] This relates to **selection bias**.* Are participants representative of the target population? Sampling method is clearly defined, ensures minimal bias is introduced, if participants are randomly selected from a comprehensive list of individuals in the target population (not likely to be a selection bias). Participants may not be representative if they are referred from a source (e.g. clinic) in a systematic manner and may introduce bias (somewhat likely). A sample is highly selected if participants are self-referred or volunteers (highly likely).

[iii] This relates to **selection bias**.* The participation rate is defined as the number of study participants divided by the number of eligible subjects, and should be calculated separately for each group in the study. A large difference in participation rate between the groups of the study indicates that a significant degree of **selection bias*** may be present, and the study results should be treated with considerable caution if greater than 20%.

[iv] This relates to the risk of **detection bias**.* Once enrolled in the study, participants should be followed until specified end points or outcomes are reached. **If outcomes and the criteria used for measuring them are not clearly defined, the study should be rejected.**

[v] This relates to the risk of **detection bias.*** If the assessor is blinded to group status of participant (if participant belongs to sex offender group or not), the prospects of unbiased results are significantly increased. Studies in which this is done should be rated more highly than those where it is not done, or not done adequately.

[vi] This relates to the risk of **detection (reporting) bias*.** Study participants should not be aware of (blinded to) the research question. The purpose of blinding the participants is to protect against reporting bias.

[vii] This relates to the risk of **detection bias.*** Blinding is not possible in many cohort studies. In order to assess the extent of any bias that may be present, it may be helpful to compare process measures used on the participant groups - e.g. frequency of observations, who carried out the observations, the degree of detail and completeness of observations. If these process measures are comparable between the groups, the results may be regarded with more confidence.

[viii] This relates to the risk of **detection bias.*** A well conducted study should indicate how the degree group status was assessed (method used to assess which group participants were allocated to). Whatever measures are used must be sufficient to establish clearly that participants do or do not belong in the group (sex offender groups or control) under investigation. Clearly described, reliable measures should increase the confidence in the quality of the study.

[ix] This relates to the risk of **detection bias.*** The primary outcome measures used should be clearly stated in the study. **If the outcome measures are not stated, or the study bases its main conclusions on secondary outcomes, the study should be rejected.** Where outcome measures require any degree of subjectivity, some evidence should be provided that the measures used are reliable and have been validated prior to their use in the study.

[x] This relates to the risk of **detection bias.*** Confidence in data quality should be increased if dependent variable is measured more than once in the course of the study. Independent assessment by more than one investigator is preferable.

[xi] Confounding is the distortion of a link between group status and outcome by another factor that is associated with both group status and outcome. The possible presence of confounding factors is one of the principal reasons why observational studies are not more highly rated as a source of evidence. The report of the study should indicate which potential confounders have been considered, and how they have been assessed or allowed for in the analysis. Clinical

judgement should be applied to consider whether all likely confounders have been considered (*Relevant confounding factors in this area: Age, Socio-economic status, substance misuse, social desirability, length of incarceration*). If the measures used to address confounding variables are cnsidered inadequate, the study should be downgraded or rejected, depending on how serious the risk of confounding is considered to be. **A study that does not address the possibility of confounding should be rejected.**

[xii] Was the power calculation of the study reported? A power of 0.8, i.e. it is likely to see an effect of a given size if one exists, 80% of the time. If the power is not reported, given an expected medium effect size (r=.3) Was the sample size adequate? If no power calculation was provided, a medium effect size According to Cohen (1992) was the sample size adequate for a medium effect size in correlational study (Sign r; N=85) or ANOVA study (2 groups N=65, 3 groups N=52, 4 groups N=45, 5 groups N=39).

[xiii] Analytical methods appropriate for the design. For example, it is important to review the appropriateness of any subgroup analyses (and whether pre-specified or explanatory) that are presented. Although subgroup analyses can often provide valuable information on which to base further research (that is, are often explanatory), it is important that findings of the subgroup analyses are not over (or under) emphasised. Meaningful results from subgroup analyses are beset with problems of multiplicity of testing (in which the risk of a false positive result increases with the number of tests performed) and low statistical power (that is, studies generally only enrol sufficient participants to ensure that testing the primary study hypothesis is adequately powered) (Assmann et al. 2000). In a good quality paper, subgroup analyses are restricted to pre-specified subgroups and are often confined to primary outcomes measures. Data are analysed using formal statistical tests of interaction (that assess whether effect differs between subgroups) rather than comparison of subgroup p values. A correction for multiple testing is performed where appropriate (for example. 'Bonferroni correction').The results are delineated carefully, and full details of how analyses were performed are provided.

[xiv] Confidence limits are the preferred method for indicating the precision of statistical results, and can be used to differentiate between an inconclusive study and a study that shows no effect. Studies that report a single value with no assessment of precision should be treated with extreme caution.

Overall score: alme
[xv] Rate the overall methodological quality of the study, using the following as a guide:
High quality (++): Majority of criteria met. Little or no risk of bias. Results unlikely to be changed by further research (11-15 criteria met)
Acceptable (+): Most criteria met. Some flaws in the study with an associated risk of bias, Conclusions may change in the light of further studies.(6-10 criteria met)
Low quality (0): Either most criteria not met, or significant flaws relating to key aspects of study design. Conclusions likely to change in the light of further studies (0-5 criteria met)

[xvi] Rate the association between sex offenders and social anxiety based on effect size.
Strong (++): Large effect size reported (or if not reported cohen's *d* calculated: *d*=.08).
Moderate (+): Medium effect size reported (or if not reported cohen's *d* calculated: *d*=.05).
Weak (0): small effect size reported (or if not reported cohen's *d* calculated: *d*= .03).
Can't say (0): If it is not possible to calculate effect size due to information not reported or analysis not complete.

APPENDIX B.1
INSTRUCTIONS FOR AUTHORS FOR STUDY

Journal of Sexual Aggression

An international, interdisciplinary forum for research, theory and practice

Instructions for authors

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- A typical article (Research and conceptual development) will not exceed 6,000 words; 'Reviews' up to 8,000 words; 'Practice' articles between 4,000-6,000 words; 'Debate' articles up to 5,000 words. Tables, figures and references are not included in this word count. Manuscripts that greatly exceed this will be critically reviewed with respect to length. Authors should include a word count with their manuscript.
- Manuscripts should be compiled in the following order: title page; abstract; keywords; main text; acknowledgements; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figure caption(s) (as a list).
- Abstracts of 150 words are required for all manuscripts submitted.
- Each manuscript should have 6 keywords .
- Search engine optimization (SEO) is a means of making your article more visible to anyone who might be looking for it. Please consult our guidance here .
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- All authors of a manuscript should include their full names, affiliations, postal addresses, telephone numbers and email addresses on the cover page of the manuscript. One author should be identified as the corresponding author. Please give the affiliation where the research was conducted. If any of the named co-authors moves affiliation during the peer review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after the manuscript is accepted. Please note that the email address of the corresponding author will normally be displayed in the article PDF (depending on the journal style) and the online article.
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- Biographical notes on contributors are not required for this journal.
- Please supply all details required by any funding and grant-awarding bodies as an Acknowledgement on the title page of the manuscript, in a separate paragraph, as follows:
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Footnotes and Tables

Footnotes are not normally permitted but endnotes may be used if necessary. Tables should be laid out clearly and supplied on separate pages, with an indication within the text of their approximate location. Vertical lines should be omitted, and horizontal lines limited to those indicating the top and bottom of the table, below column headings and above summed totals. Totals and percentages should be labelled clearly.

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Last updated November 2013

APPENDIX B.2

UNIVERSITY ETHICAL APPROVAL

Original Ethics Approval

School of Health in Social Science
Clinical Psychology

The University of Edinburgh
Medical School
Doorway 6, Teviot Place
Edinburgh EH8 9AG

Telephone: 0131 651 3969
Fax: 0131 650 3891
Email: submitting.ethics@ed.ac.uk

Shauneen Porter
41 Pitt Street
Edinburgh
EH6 5BU

02 April 2013

Dear Shauneen,

Re: Social phobia, Obsessive Compulsive Disorder and loneliness in internet child pornography offenders

Application for Level 2/3 Approval

Thank you for submitting the above research project for review by the Section of Clinical Psychology Ethics Research Panel. I can confirm that the submission has been independently reviewed and was approved on the 7th February 2013.

Should there be any change to the research protocol it is important that you alert us to this as this may necessitate further review.

Yours sincerely,

Kirsty Gardner
Secretary
Clinical Psychology

Amended Ethics Approval

School of Health in Social Science
Clinical Psychology

The University of Edinburgh
Medical School
Doorway 6, Teviot Place
Edinburgh EH8 9AG

Telephone 0131 651 3969
Fax 0131 650 3891
Email submitting-ethics@ed.ac.uk

Shauneen Porter
41 Pitt Street
Edinburgh
EH6 5BU

16 December 2013

Dear Shauneen,

Level 2/3 Approval – Amendments

Re: Social phobia, Obsessive Compulsive Disorder and loneliness in internet child pornography offenders

I can confirm that the amendments to the above research ethics submission have been independently reviewed and were approved on the 23rd May 2013.

Should there be any further changes to the research protocol it is important that you alert us to this as this may necessitate further review.

Yours sincerely,

Kirsty Gardner
Secretary
Clinical Psychology

APPENDIX B.3

CRIMINAL JUSTICE SOCIAL WORK APPROVAL

CJSW approval email:

To: shauneenporter@hotmail.com
Cc: Susan Forsyth, Harry Robertson
From:**Eleanor Cunningham** (Eleanor.Cunningham@edinburgh.gov.uk)
Sent: 21 December 2012 12:11:14
To: shauneenporter@hotmail.com
Susan Forsyth (Susan.Forsyth@edinburgh.gov.uk); Harry Robertson
Cc: (Harry.Robertson@edinburgh.gov.uk)

Dear Shauneen

Thank you for your email and your revised materials, which are now broadly satisfactory, subject to some minor amendments.

I am please to tell you that your research access request has been accepted. Susan Forsyth, Senior Social Worker at the Community Intervention Service, will now be your main contact and will be able to advise you of any other members of staff that you should contact.
The minor points:

1. On your participant information sheet, there is a typo "...'drop in' sessions with the researcher if you have any questions".

2. Consent form: "I understand that my participation is voluntary and that I am free to withdraw **without** (needs to be added) giving a reason"

3. Consent form: "I understand that only the researchers will have access to my responses and (I suggest you add) **that these responses** will have no impact on the services ....."

As a condition of gaining research access, we require you to provide us with your final report (and any interim reports that you think would be relevant). These reports are valuable in ensuring that practitioners and other staff within the Council are informed of research findings and to assist staff in general with their engagement in the research process.
I wish you all the best with your projects. Please contact me if you require further information at any stage

Kind regards
Eleanor
Eleanor Cunningham
Research and Information Manager
Department of Health and Social Care

APPENDIX B.4

PRISON SERVICE ETHICS REJECTION

Initial rejection email to recruit in prison service via prison staff:

To: 'shauneen porter', s.porter-4@sms.ed.ac.uk

From: **Carnie James** (James.Carnie@sps.pnn.gov.uk)

Sent: 18 February 2013 16:26:44

NOT PROTECTIVELY MARKED

Dear Shauneen

Apologies for the delay in responding, but a combination of out of office commitments and internal meetings on the prisoner population management project have taken their toll on available time.

Your research proposal was considered at the meeting of the Research Access and Ethics Committee on 13 February. I regret to say that access was not approved on this occasion.

The RAEC deliberated over the study for some considerable time. The Committee thought that while the topic was of interest, there were significant prison management issues in its conduct within the penal environment. The methodology appears to place a considerable onus on SPS staff to undertake many of the fieldwork tasks. It was not clear how the separate groups required – CPOs, CCMs and non-sexual offenders - were to be identified and sampled in prison. The number of participants required was not explicitly stated and it appeared that identification through prisoner records, screening for a learning disability or a mental health issue through health records, and distribution and collection of consent information and questionnaires were essentially the responsibility of SPS staff. A researcher 'drop-in session' was mentioned in the community setting, but the feasibility of this in prison was questioned.

The RAEC noted that you were working in community settings and that offered the possibility of increasing your numbers for inclusion in the study.

The resource implications and demands on SPS staff time were felt to be too onerous and could not be justified when high prisoner numbers are currently creating operational and management pressures.

I am sorry that the RAEC was unable to take a more favourable view of the proposed project and that SPS cannot be of more assistance on this occasion. Committee members understood that you will be disappointed, but wished you well in the successful completion of your community work.

Regards

Jim

Second rejection email to recruit prisoners via Criminal Justice Social Work staff:

To: 'shauneen porter'

From:Carnie James (James.Carnie@sps.pnn.gov.uk) This sender is in your safe list.
Sent: 12 April 2013 15:24:46
To: 'shauneen porter' (shauneenporter@hotmail.com)
NOT PROTECTIVELY MARKED

Shauneen

I was working my way through the RAEC correspondence when your email came in. I am afraid to say that the RAEC did not approve the proposed distribution method via a CJSW contact. While the RAEC wished to be helpful they still viewed this as prisoner contact which could have implications for the Service by way of challenge i.e. why a prisoner was being approached by an external researcher while he was in prison.

I know this will be a disappointment and again I am sorry that we cannot be of more assistance.

The RAEC continues to wish your project well in its community setting.

Regards
Jim

APPENDIX B.5

TABLE OF VARIABLES FOR EXCLUDED PARTICIPANTS

Excluded participants:

Table 1: Demographics of excluded participants

	Group 1 Mixed Internet/ contact offenders (n=4)	Group 2 Contact offenders (n=5)	Group 3 Violent Offenders (n=7)	Group 4 All Non-offenders (non-students) (n=105)
Age	56.5 (2.38)	51.8(13.7)	40.71 (27.05)	36 (10.99)
Ethnicity				
British white	4 (100%)	5 (100%)	6(85.7%)	127 (99.2%)
Other			1(14.3%)	1 (0.8%)
Parent	3 (75%)	3 (60%)	1 (14.2%)	79 (61.7%)
Education level				
No qualifications	2(50%)	2(40%)	2 (28.6%)	0
Standard grades/ GCSE	0	1 (20%)	3 (42.8%)	9(7%)
Highers/ 'A'Level	1(25%)	0	1 (14.3%)	25 (19.5%)
Degree	1(25%)	2 (40%)	0	56(43.8%)
Post-grad	0	0	0	25 (19.5%)
Doctorate	0	0	0	10 (7.8%)

Table: Mean and standard deviations of excluded participant scores on completed measures.

Measures	Group 1 Mixed Internet/ contact offenders (n=4)	Group 2 Contact offenders (n=5)	Group 3 Violent Offenders (n=7)	Group 4 All Non-offenders (non-students) (n=105)
Social Desirability Total (Marlowe-Crowne Scale)	12.5(6.16)	15.58 (5.14)	15.0 (3.17)	15.7 (5.3)
Denial Subscale	5.5 (4.43)	6.2 (3.19)	5.57 (2.7)	6.3 (3.1)
Attribution subscale	7.0 (2.71)	9.38 (2.92)	9.43 (2.31)	9.38 (3.01)
Loneliness *(UCLA)*	50.5 (9.26)	48 (19.57)	36.86 (14.7)	38.78 (9.18)
SIPS Total	6.5 (4.35)	15.4 (9.7)	11.86 (14.55)	6.86 (7.2)
Social interaction Subscale	4.25 (3.1)	8.4 (6.42)	4 (5.16)	3.83 (3.71)
Fear of overt evaluation subscale	1.5 (1.73)	4.2 (2.77)	5.14 (6.44)	2.08 (2.88)
Fear of attraction negative attention	0.75 (0.5)	2.8 (2.16)	2.71 (3.09)	0.96 (1.81)
OCD total *(OCI-R)*	4 (4.32)	17.4 (14.72)	19.8 (18.41)	9.08 (9.75)
Dependency: Online cognitions subscale *(OCS)*	15 (9.36)	9.6 (4.22)	-	15.71 (7.8)
Distractibility: Online Cognitions subscale	7.5 (0.7)	3.6 (1.34)	-	8.7 (5.01)

APPENDIX B.6

STUDY INFORMATION SHEET FOR PARTICIPANTS

Participant Information Sheet:

Study 1: An evaluation of Social Phobia, Obsessive-Compulsive Disorder and Loneliness.

We would like to invite you to take part in a research study being conducted in Scotland. Before you decide if you would like to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and to discuss it with the researcher if you wish.

The studies have been approved by the University of Edinburgh's (UoE) School of Health in Social Science Research Ethics Committee.

Name and contact details of Principal researcher:	**Shauneen Porter** **Email: S.Porter-4@sms.ed.ac.uk** **Telephone: 0131 537 5830**

Please ask the researcher any questions you have. You can phone or email the researcher, or there will be 'drop in' sessions with the researcher if you have any questions.

What are the aims of these projects?

This is a study to examine thoughts and behaviours in offenders in order to aid assessment and intervention.

What will be involved?

If you decide to take part, we would like you to complete the four brief questionnaires. There are no right or wrong answers so we would like you to feel free to share your personal experiences.

You will be asked to complete a consent form and questionnaires in private and then return it in a sealed envelope provided. Or, the researcher can complete the questionnaires with you if you have difficulties with reading and writing. Only the researcher has access to your responses.

It is unlikely the questionnaire will cause you distress. However, should this happen, then we would advise you to talk this through with your GP, Group facilitator/prison officer, or the researcher.

You have the right to withdraw from the study at any point. This will not have any implications for treatment or services. If you choose to withdraw, please inform your group facilitator/prison officer/support worker. They will inform the researcher and your questionnaires will be identified by the unique numeric identifier and the data destroyed.

How long will it take?

The questionnaires will take approximately 15 minutes to complete. You can complete them privately or if requested support will be provide and the researcher will complete them with you.

Do I have to take part?

No. You should only participate if you want to. You are free to withdraw your involvement at any time.

The support and help you receive from services/treatment will not be affected if you decide at anytime you do not want to take part.

Will my taking part in this study be kept confidential?

Yes. Given the way the study is designed others will be aware of your participation but will not have access to your questionnaire responses. The questionnaires will be confidential and no identifying information will be collected. Each participant will be given a unique numeric identifier.

What happens to my data/personal information?

The only people with access to your data will be the principal researchers. Data will be held securely at the University of Edinburgh. No identifying personal information will be collected. All information will be stored electronically in databases without any identifying features.

What are the possible benefits of taking part?

The information gathered from this study will help psychologists plan future research and contribute to the assessment and interventions for offenders.

What will happen to the results of the research study?

If requested a summary of the results of the study will be provided. The final results and conclusions of the study will be shared through conferences and peer reviewed scientific journals. Your identification will not be included in any publication.

If you would like to receive a summary of the results of this study please inform the researcher and they will provide this when the study is complete.

Who can I contact for further information and/or help?

If you would like any more information about the study, please contact Shauneen Porter at: S.Porter-4@sms.ed.ac.uk

Thank you very much for reading this information sheet.

APPENDIX B.7

NON-OFFENDER RECRUITMENT EMAIL

Email to non-offending participants:

Subject: Request for participation in research

Thank you for agreeing to hear more about this research. I am a Trainee Clinical Psychologist, studying at the University of Edinburgh. To meet the criteria of this postgraduate course I am conducting research about people's thoughts and behaviours in order to aid assessment and intervention. I hope to compare four different groups of people.

This research has received ethical approval from The University of Edinburgh. I am conducting it to meet the requirements of a postgraduate qualification in Clinical Psychology. The online survey is hosted by Edinburgh and Bristol universities (link to this BOS website).

Information about the research is provided prior to participating. If you are considering participation it is important that you read this. If you have any questions about the study, please do not hesitate to be in touch. I can be contacted at this e-mail address (s.porter-4@sms.ed.ac.uk).

Taking part in this research should take approximately 15-20 minutes. Your participation is anonymous and your confidentiality will be maintained. The information you provide will not be shared with any third parties. Although it is very unlikely that taking part will cause distress, if you find that some of your answers cause you concern I recommend that you contact your GP to discuss these issues. If you would like to find out about the results of the study, you will have the opportunity to indicate this at the end of the survey.

I would be grateful if you could forward this e-mail to three people that you know. Increasing the number of participants will allow me to be more confident about the results of the study.

To participate in the study, please click on this link (BOS Survey link). Your participation is gratefully appreciated.

Shauneen Porter
Trainee Clinical Psychologist
s.porter-4@sms.ed.ac.uk

APPENDIX B.8

STUDY CONSENT FORM

CONSENT FORM

Study Title: (1) **An evaluation of Social Phobia, Obsessive-Compulsive Disorder and Loneliness.**

Name of Researcher: Shauneen Porter

Please initial box

I confirm that I have read and understand the Participant Information Sheet dated 10.12.2012 for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw without giving a reason, at any time and my data will be destroyed. This will have no impact on medical care or legal rights.	☐
I understand that only the researchers will have access to my responses and these responses will have no impact on the services/treatment I receive.	☐
I understand that the information obtained from all measures that I complete as part of the research study will be anonymous.	☐
I understand that this research may be published, and that participation will be anonymous.	☐
I agree to take part in the above study and complete the following questionnaires.	☐

Signed (client): _____ Date: _____

APPENDIX C

References: BPS Style

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